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1994 ANNUAL
GROUND WATER SAMPLING REPORT
LIVINGSTON RAIL YARD
LIVINGSTON, MONTANA

Submitted to:

Montana Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, Montana 59620

Submitted by:

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PLEASE RETUR

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Submittal Date:

November 3, 1994

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1.0 INTRODUCTION

This report presents the results of ground water samples collected during the first and second quarters of 1994 at the Livingston Rail Yard (LRY), in Livingston, Montana. Ground water sampling for these quarters consisted of the February 1994 quarterly sampling event and the May 1994 annual sampling event. In a letter dated February 22, 1994, the MDHES approved a single annual ground water sampling report for the Livingston Rail Yard. This annual report will include the annual sample round conducted during May of each year. Laboratory results for the quarterly ground water sample events will be sent directly to the MDHES with a cover letter.

2.0 SAMPLE RESULTS AND DISCUSSION

This section presents the results of samples taken during the February 1994 and May 1994 sample events. All ground water samples taken during the February 1994 sample event were analyzed for purgeable halocarbons by EPA Method 601. All ground water samples taken during the May 1994 sample event were analyzed for purgeable halocarbons by EPA Method 601 with the exception of Wells LS-6, LS-11, L-87-2, L-87-7, L-87-8, and L-88-10 which were analyzed for regulated and unregulated volatile organic compounds (VOCs) by EPA Method 524.2. In addition, ground water samples taken from Wells L-87-2, L-87-4, L-87-7, and L-87-8 during the May 1994 event were also analyzed for Diesel Range Organics (DRO). All analyses were performed at Energy Laboratories, Inc. in Billings, Montana.

2.1 February 1994 Quarterly Ground Water Sampling Event

The February 1994 quarterly sampling event was conducted February 15 through 17, 1994. Twenty samples were analyzed as part of this event: 16

were primary samples collected at monitoring wells within and around the LRY, two samples were field duplicates, one sample was a trip blank, and one sample was an equipment-decontamination blank. The monitor well locations of all samples taken during February 1994 are shown on Figure 1.0. Tables 1, 2, 3, and 4 summarize February 1994 analytical results for tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (DCE); and chlorobenzene, respectively. Laboratory results are in Appendix A.

All monitor wells scheduled for sampling during February 1994 were sampled with the exception of Well LS-8. Monitoring Well LS-8 was abandoned during sludge removal activities located at the API overflow pond in October 1992; therefore, this well could not be sampled.

2.2 May 1994 Annual Ground Water Sampling Event

The May 1994 annual sampling event was conducted May 4 through May 10, 1994. Forty-six samples were initially taken as part of this event: 38 were primary samples collected at monitoring wells within and around the LRY, three samples were field duplicates, three samples were trip blanks, and two samples were equipment decontamination blanks. Two primary samples (Wells L-87-2 and 92-3) and one equipment blank froze at the laboratory and could not be analyzed. Wells L-87-2 and 92-3 were re-sampled during June 1994 and the results are included here. The locations of all sample points are shown on Figure 1.0. Tables 1, 2, 3, and 4 summarize analytical results for tetrachloroethene (PCE); trichloroethene (TCE); cis-1,2-dichloroethene (DCE); and chlorobenzene, respectively. Laboratory analytical results and a data validation report are in Appendix B.

All monitor wells scheduled for sampling were sampled with the exception of Well LS-8. Monitoring Well LS-8 was abandoned during sludge

removal activities located at the API overflow pond in October 1992; therefore, this well could not be sampled.

2.3 Discussion of Sample Results

Ground water samples collected during the February and May, 1994 sampling events contained dissolved chlorinated-VOC concentrations that continued the overall decline observed during the past five years. These concentration declines are a result of the source control activities instituted during the past five years and also to the relatively small total mass of chlorinated solvents originally present on the LRY. Figures 2.0 through 4.0 shown the extent of tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (DCE) concentrations in May 1994.

The overall decline in dissolved PCE, TCE, and DCE concentrations is illustrated by comparing Figures 2.0 through 4.0 with Figures 5.0 through 7.0 which show PCE, TCE, and DCE concentrations in May 1990. In May 1990, PCE concentrations averaged 300 to 500 parts per billion (ppb) in the shop area, and the 200 ppb contour extended eastward nearly the length of the rail yard (Figure 5.0). In comparison, in May 1994 shop-area PCE concentrations were generally less than 100 ppb, and no measured PCE concentrations exceeded 138 ppb anywhere in the rail yard (Figure 2.0).

TCE concentrations have shown a concentration decline similar to that of PCE. In May 1990, TCE concentrations exceeded the 5 ppb maximum contaminant level (MCL) over an area stretching from the shop area eastward to the Yellowstone River (Figure 6.0). In contrast, the May 1994 TCE concentrations exceed the 5 ppb MCL in a much more restricted area almost entirely within the LRY property boundary (Figure 3.0).

The decline in cis-1,2-DCE concentrations has been greater than that of PCE and TCE. In May 1990, cis-1,2-DCE concentrations were greater than 700 ppb in the Waste Water Treatment Plant (WWTP) area, with concentrations greater than 100 ppb extending eastward to the end of the rail yard (Figure 7.0). In contrast, in May 1994, the cis-1,2-DCE concentrations did not exceed the MCL (70 ppb) anywhere within the rail yard (Figure 4.0).

Ground water samples from Wells L-87-2, L-87-4, L-87-7, and L-87-8 were analyzed for DRO. No DRO were detected in the sample from Well L-87-4. Wells L-87-2, L-87-7, and L-87-8 contained 1.8, 2.0, and 30 mg/l DRO respectively. The DRO concentration in the sample from Well L-87-8 is due to a faulty dedicated bladder pump which allows floating product present in the well to enter the sample. This pump is scheduled for repair or replacement.

As discussed above, the May 1994 sample from Monitor Well L-87-2 froze and broke at the laboratory and this well was re-sampled during June 1994. The June 1994 sample contained 7 ug/l of vinyl chloride, a degradation product of cis-1,2-DCE. The vinyl chloride may be a result of biodegradation of cis-1,2-DCE resulting from the soil venting and air sparging tests in Test Area 2. Further sampling will be necessary to determine the source of this vinyl chloride.

Two new monitor wells, 94-1 and 94-2, were installed on the east side of the Yellowstone River on March 30, 1994. Monitor Well 94-1 is located approximately 1,000 feet east of the Yellowstone River and 1,500 feet north of Highway 89. Monitor Well 94-2 is located approximately 1,000 feet east of the Yellowstone River and 100 feet south of Highway 89. Both wells were sampled in May 1994. Sample results, shown on Tables 1.0 through 4.0, reveal that

Well 94-1 contained a PCE concentration of 2.4 ug/l and Well 94-2 contained a PCE concentration of 0.5 ug/l. Both of these concentrations are below the Maximum Contaminant Level (MCL) for PCE.

2.4 Free-Product Thickness Measurements

During the February and May 1994 sample events, apparent free-product thicknesses were measured in monitor and observation wells located within the free-product plume. In addition, during March 1994, nine new wells were installed along the south perimeter of the free product plume at the direction of the MDHES. These new wells were installed to investigate the potential for product migration within the plume. Product thickness measurements were taken in these nine new wells weekly and monthly through May 1994. Table 5 shows all of the free-product thickness measurements taken between February 1994 and May 1994. Figure 8.0 shows the general outline of the free product plume and the location of all wells measured between February and May 1994.

As shown on Table 5.0, many of the wells within the general outline of the free product plume do not contain any measurable free product. Moreover, of the wells containing measurable free product, most contain significantly less than one foot total apparent thickness. Assuming that actual product thicknesses are approximately one-quarter of the apparent thickness, this indicates that the majority of the plume contains only a very thin layer (less than 1 inch) of actual free product. Of the nine new monitor wells installed during March 1994, only two contained any measurable free product during May 1994. This indicates that there is no free product migration in the direction of these wells.

TABLES

Table 1: Tetrachloroethene Analytical Results for Ground-Water Samples Collected During Quarterly Sampling Rounds, Livingston Rail Yard, Livingston, Montana.

Chemical Parameter: ***Tetrachloroethene*** Units: ***ug/L***

Monitoring Well	1993 August Quarterly	1993 November Quarterly	1994 February Quarterly	1994 May Annual
1	-	1.4 B	-	0.68 B
2	-	0.81 B	-	20.0 B
3	-	-	-	0.68 B
4	-	-	-	0.68 B
5	1.1 A	< 0.5 B	0.63 B	0.64 B
6	-	1.8 B	-	1.1 B
7	-	-	-	13.0 B
8	-	-	-	50.0 B
89-1	-	-	-	6.9 B
89-10	-	-	-	69.0 B
89-2	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
89-3	300.0 A	180.0 B	210.0 B	119.0 B
89-4	120.0 B	140.0 B	150.0 B	138.0 B
89-6	-	-	-	1.0 B
89-7	-	-	-	10.0 B
89-9	-	90.0 B	96.0 B	80.0 B
90-2B	-	-	-	62.0 B
90-3	-	-	-	33.0 B
90-6	< 0.5 B	1.1 B	1.1 B	< 0.5 B
92-1	210.0 B	200.0 B	86.0 B	87.0 B
92-2	7.5 B	29.0 B	32.0 B	15.0 B
92-3	1.5 B	< 0.5 B	< 0.5 B	< 0.5 B
92-4	2.0 B	2.5 B	38.0 B	35.0 B
B-STREET	-	-	-	-
HRO-17	-	-	-	-
L-87-2	< 0.5 A	-	< 0.5 B	< 0.5 B
L-87-3	81.0 B	86.0 B	100.0 B	96.0 B
L-87-4	-	-	-	< 0.5 B
L-87-5	93.0 B	80.0 B	75.0 B	58.0 B
L-87-7	-	-	-	< 0.5 B
L-87-8	3.4 B	5.0 B	5.2 B	14.0 B
L-88-10	39.0 B	47.0 B	73.0 B	45.0 B
L-88-13	-	-	-	16.0 B
L-88-9	-	-	-	-
LS-11	28.0 B	4.4 B	41.0 B	39.0 B
LS-6	-	-	-	< 0.5 B
LS-8	-	-	-	-
RAINBOW	-	-	-	10.0 B

Note: Analyte concentrations are listed with assigned data usability validation codes.
Validation Code Definition: B - Quantitative Quality, A - Qualitative Quality, U - Unusable

Table 2: Trichloroethene Analytical Results for Ground-Water Samples Collected During Quarterly Sampling Rounds, Livingston Rail Yard, Livingston, Montana.

Chemical Parameter: ***Trichloroethene*** Units: ***ug/L***

Monitoring Well	1993 August Quarterly	1993 November Quarterly	1994 February Quarterly	1994 May Annual
1	-	< 0.5 B	-	< 0.5 B
2	-	< 0.5 B	-	0.73 B
3	-	-	-	< 0.5 B
4	-	-	-	< 0.5 B
5	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
6	-	< 0.5 B	-	< 0.5 B
7	-	-	-	0.5 B
8	-	-	-	2.8 B
89-1	-	-	-	< 0.5 B
89-10	-	-	-	5.7 B
89-2	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
89-3	1.3 B	0.83 B	0.63 B	0.91 B
89-4	2.5 B	1.8 B	2.0 B	1.6 B
89-6	-	-	-	< 0.5 B
89-7	-	-	-	1.4 B
89-9	-	4.1 B	3.5 B	2.5 B
90-2B	-	-	-	9.0 B
90-3	-	-	-	3.0 B
90-6	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
92-1	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
92-2	< 5.0 B	2.5 B	3.3 B	2.0 B
92-3	< 0.5 B	< 0.5 B	< 0.5 B	< 0.5 B
92-4	< 0.5 B	0.5 B	2.0 B	1.8 B
B-STREET	-	-	-	-
HRO-17	-	-	-	-
L-87-2	6.2 A	-	13.0 B	16.0 B
L-87-3	9.8 B	10.0 B	11.0 B	8.7 B
L-87-4	-	-	-	< 0.5 B
L-87-5	6.1 B	4.8 B	3.4 B	2.5 B
L-87-7	-	-	-	< 0.5 B
L-87-8	1.0 B	1.9 B	7.7 B	5.5 B
L-88-10	14.0 B	15.0 B	12.0 B	11.0 B
L-88-13	-	-	-	2.9 B
L-88-9	-	-	-	-
LS-11	8.5 B	8.8 B	9.4 B	7.0 B
LS-6	-	-	-	< 0.5 B
LS-8	-	-	-	-
RAINBOW	-	-	-	1.8 B

Note: Analyte concentrations are listed with assigned data usability validation codes.
Validation Code Definition: B - Quantitative Quality, A - Qualitative Quality, U - Unusable

Table 3: cis-1,2-Dichloroethene Analytical Results for Ground-Water Samples Collected During Quarterly Sampling Rounds, Livingston Rail Yard, Livingston, Montana.

Chemical Parameter: ***cis-1,2-Dichloroethene*** Units: ***ug/L***

Monitoring Well	1993 August Quarterly	1993 November Quarterly	1994 February Quarterly	1994 May Annual
1	-	< 1.0 B	-	< 0.5 B
2	-	< 1.0 B	-	< 0.5 B
3	-	-	-	< 0.5 B
4	-	-	-	< 0.5 B
5	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
6	-	< 1.0 B	-	< 0.5 B
7	-	-	-	0.53 B
8	-	-	-	3.3 B
89-1	-	-	-	< 0.5 B
89-10	-	-	-	14.0 B
89-2	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
89-3	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
89-4	1.2 B	< 1.0 B	< 1.0 B	0.72 B
89-6	-	-	-	< 0.5 B
89-7	-	-	-	< 0.5 B
89-9	-	2.4 B	1.0 B	0.82 B
90-2B	-	-	-	43.0 B
90-3	-	-	-	5.6 B
90-6	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-1	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-2	< 10.0 B	4.2 B	3.6 B	4.2 B
92-3	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-4	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
B-STREET	-	-	-	-
HRO-17	-	-	-	-
L-87-2	270.0 B	-	140.0 B	46.0 B
L-87-3	18.0 B	14.0 B	21.0 B	24.0 B
L-87-4	-	-	-	< 0.5 B
L-87-5	3.7 B	3.1 B	1.4 B	0.78 B
L-87-7	-	-	-	< 0.5 B
L-87-8	< 1.0 B	2.0 B	4.0 B	1.5 B
L-88-10	64.0 B	95.0 B	70.0 B	44.0 B
L-88-13	-	-	-	1.6 B
L-88-9	-	-	-	-
LS-11	16.0 B	13.0 B	30.0 B	18.0 B
LS-6	-	-	-	< 0.5 B
LS-8	-	-	-	-
RAINBOW	-	-	-	2.2 B

Note: Analyte concentrations are listed with assigned data usability validation codes.
Validation Code Definition: B - Quantitative Quality, A - Qualitative Quality, U - Unusable

Table 4: Chlorobenzene Analytical Results for Ground-Water Samples Collected During Quarterly Sampling Rounds, Livingston Rail Yard, Livingston, Montana.

Chemical Parameter: ***Chlorobenzene*** Units: ***ug/L***

Monitoring Well	1993 August Quarterly	1993 November Quarterly	1994 February Quarterly	1994 May Annual
1	-	< 1.0 B	-	< 0.5 B
2	-	< 1.0 B	-	< 0.5 B
3	-	-	-	< 0.5 B
4	-	-	-	< 0.5 B
5	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
6	-	< 1.0 B	-	< 0.5 B
7	-	-	-	< 0.5 B
8	-	-	-	< 0.5 B
89-1	-	-	-	< 0.5 B
89-10	-	-	-	< 0.5 B
89-2	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
89-3	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
89-4	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
89-6	-	-	-	< 0.5 B
89-7	-	-	-	< 0.5 B
89-9	-	< 1.0 B	< 1.0 B	< 0.5 B
90-2B	-	-	-	< 0.5 B
90-3	-	-	-	< 0.5 B
90-6	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-1	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-2	< 10.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-3	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
92-4	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
B-STREET	-	-	-	-
HRO-17	-	-	-	-
L-87-2	58.0 B	-	44.0 B	32.0 B
L-87-3	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
L-87-4	-	-	-	< 0.5 B
L-87-5	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
L-87-7	-	-	-	< 0.5 B
L-87-8	< 1.0 B	< 1.0 B	< 1.0 B	< 0.5 B
L-88-10	3.5 B	7.0 B	4.5 B	< 0.5 B
L-88-13	-	-	-	< 0.5 B
L-88-9	-	-	-	-
LS-11	150.0 B	84.0 B	60.0 B	1.1 B
LS-6	-	-	-	< 0.5 B
LS-8	-	-	-	-
RAINBOW	-	-	-	< 0.5 B

Note: Analyte concentrations are listed with assigned data usability validation codes.
Validation Code Definition: B - Quantitative Quality, A - Qualitative Quality, U - Unusable

TABLE 5

Apparent Free Product Thickness Measurements
February through May 1994

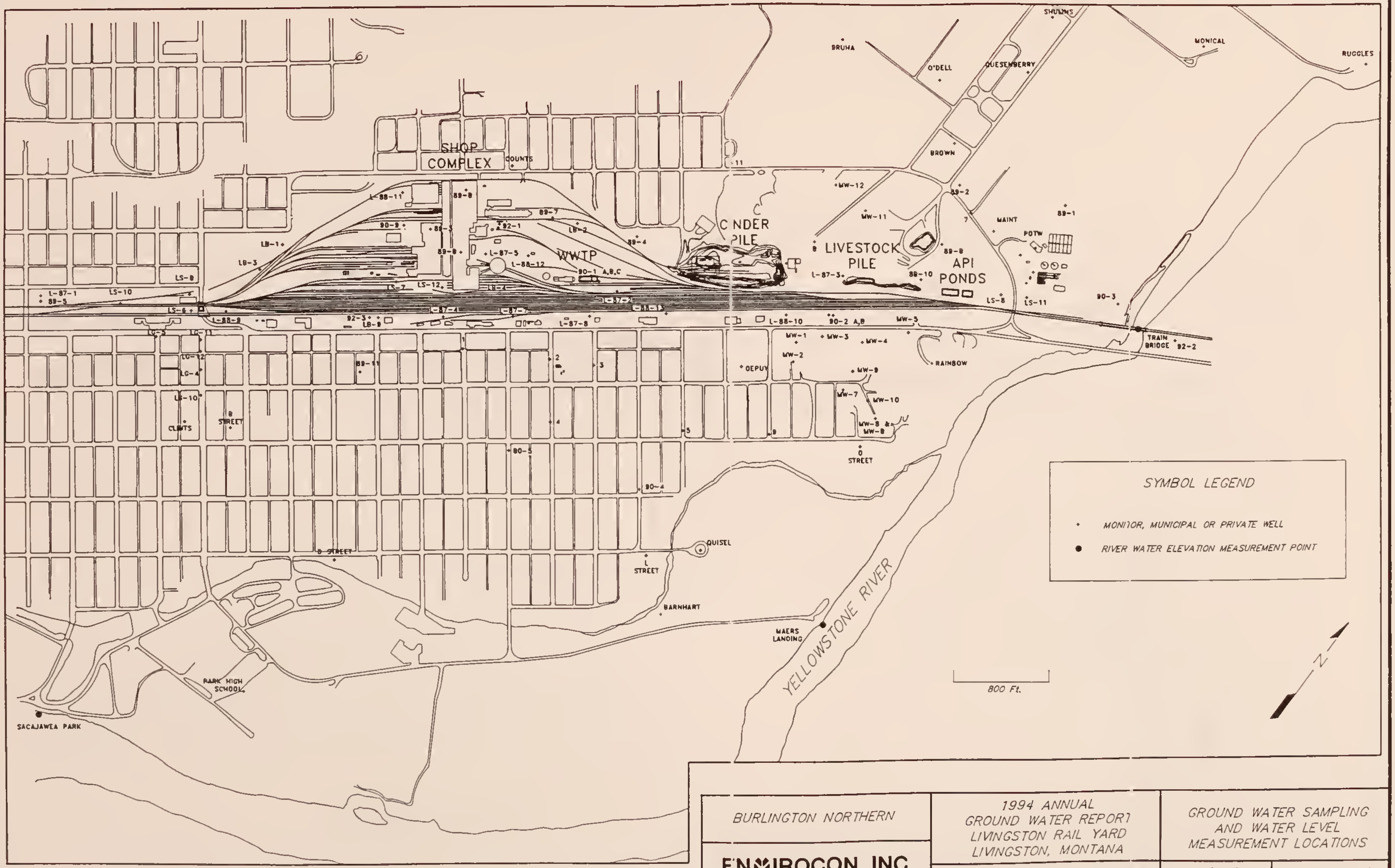
	Date										
Well	14-Feb	12-Apr	15-Apr	22-Apr	26-Apr	29-Apr	3-May	4-May	11-May	17-May	27-May
New Wells											
RW-7	0.17	0.18	0.19	0.23	0.22	0.23	0.24		0.28	0.18	0.16
RW-8	ND	ND	ND	<0.01	ND	ND	ND		<0.01	ND	ND
RW-9	ND	ND	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01
HRO-20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01		<0.01	<0.01	ND
HRO-21	<0.01	<0.01	<0.01	<0.01	ND	<0.01	ND		<0.01	<0.01	<0.01
HRO-22	ND	ND	<0.01	<0.01	<0.01	<0.01	ND		<0.01	ND	<0.01
HRO-23	<0.01	ND	ND	<0.01	ND	<0.01	ND		<0.01	<0.01	<0.01
HRO-24	ND	ND	ND	<0.01	0.03	0.01	0.01		<0.01	0.02	0.03
Old Wells											
L-87-2	ND										
L-87-4	ND							ND			
L-87-7	0.86			0.71		0.65		0.77		0.5	0.47
L-87-8	0.12			0.14	0.09	0.08	0.12	0.13	0.09	0.03	0.12
LS-7	0.31										
HRO-5	0.22										
HRO-6	0.63			0.59		0.57				0.52	0.43
HRO-7	0.58										
HRO-8	0.31										
HRO-9	0.3										
HRO-10	<0.01										
HRO-11	0.11										
HRO-12	ND										
HRO-13	ND										
HRO-14	0.01										
HRO-15	0.07										
HRO-16	0.14										
HRO-17	ND										
HRO-19	0.35										
LPZ-100	0.11										

Notes:

ND - No product detected

<0.01 - Trace of product but not measurable

FIGURES



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ENVIROCON, INC.	AutoCAD FILE: GWR-001.DWG	10/13/94	FIGURE 1.0

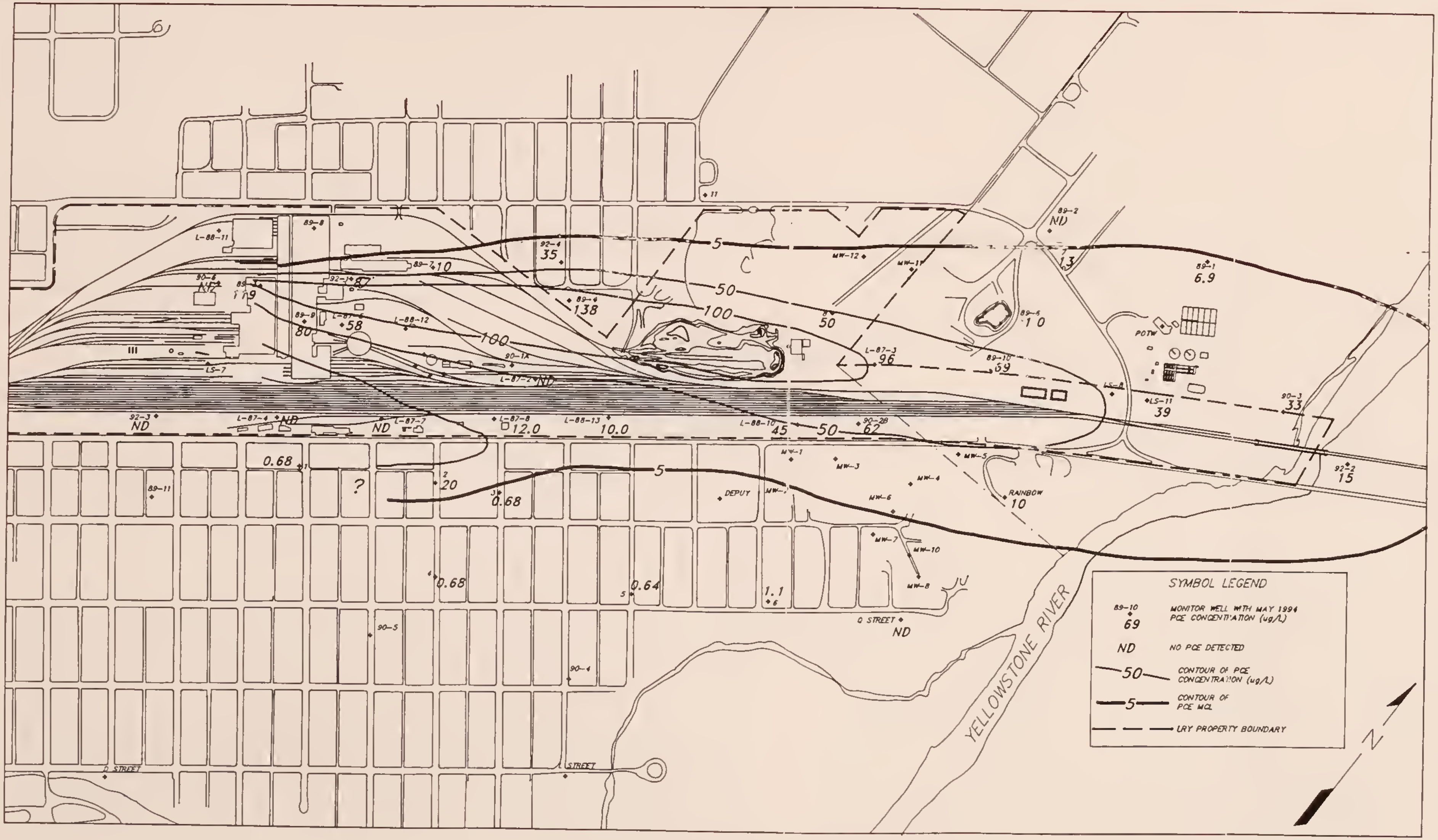

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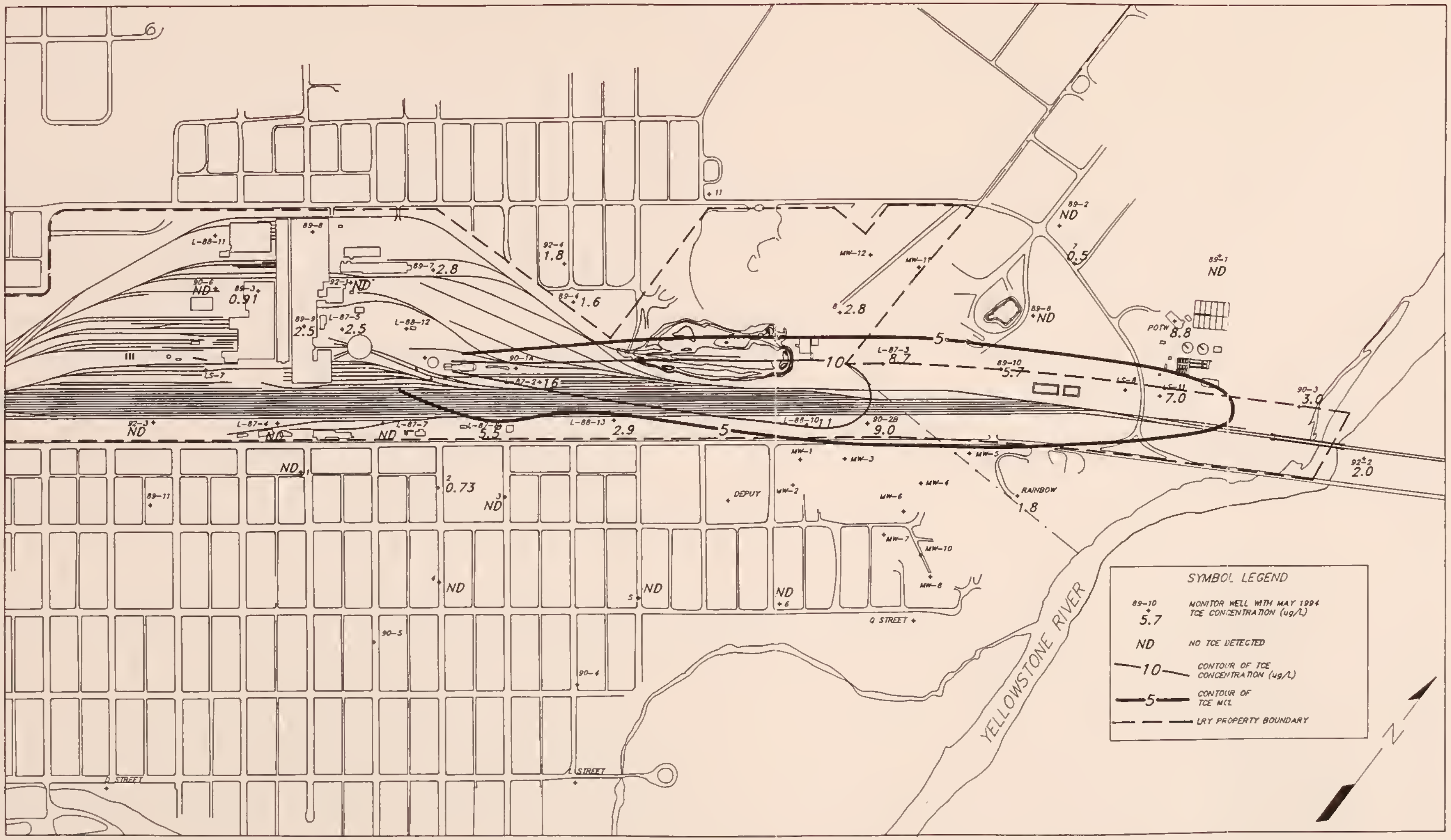
FIGURE 2.0



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MAY 1994 TCE
CONCENTRATIONS

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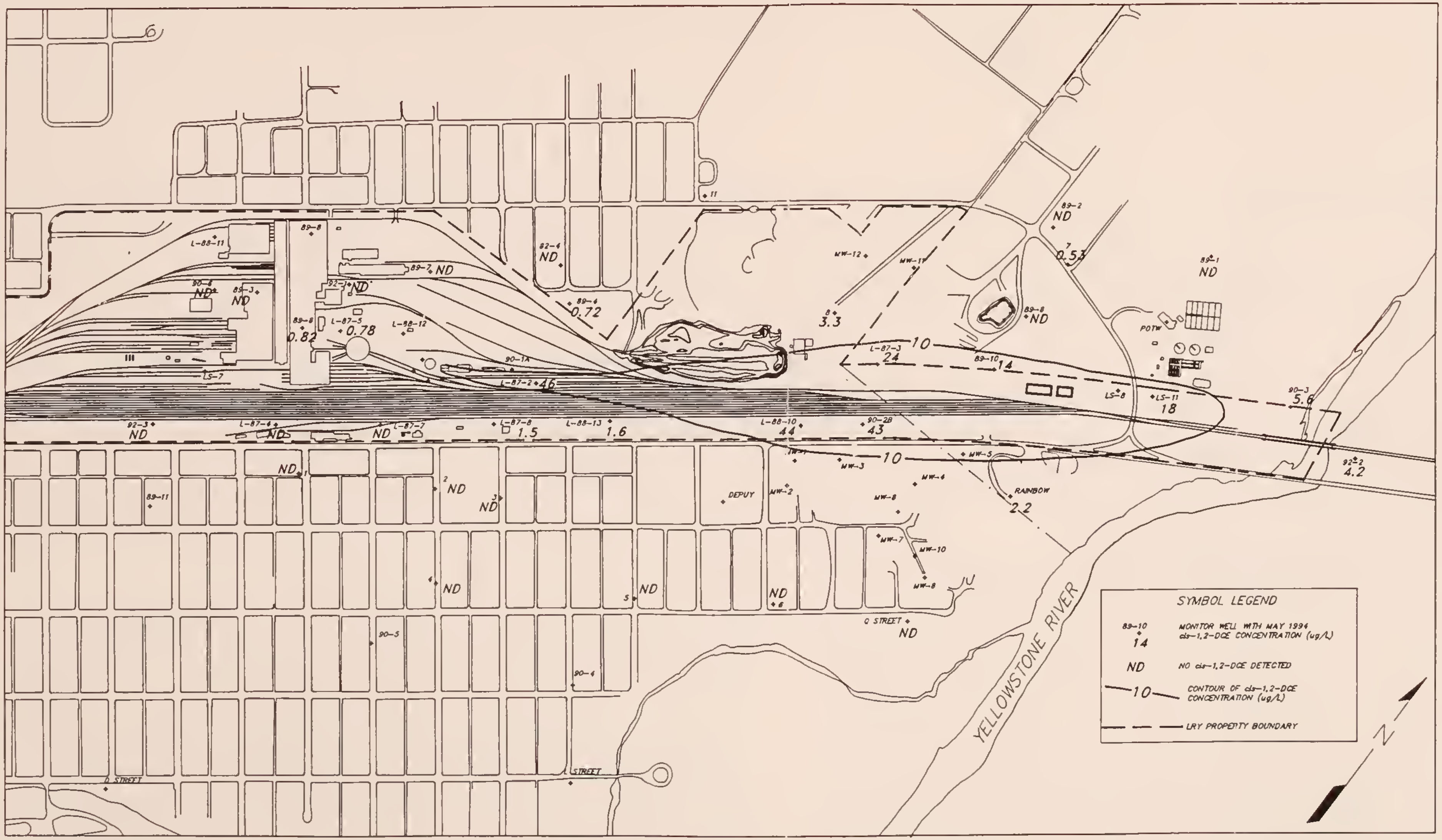
FIGURE 3.0



600 0 600
SCALE IN FEET

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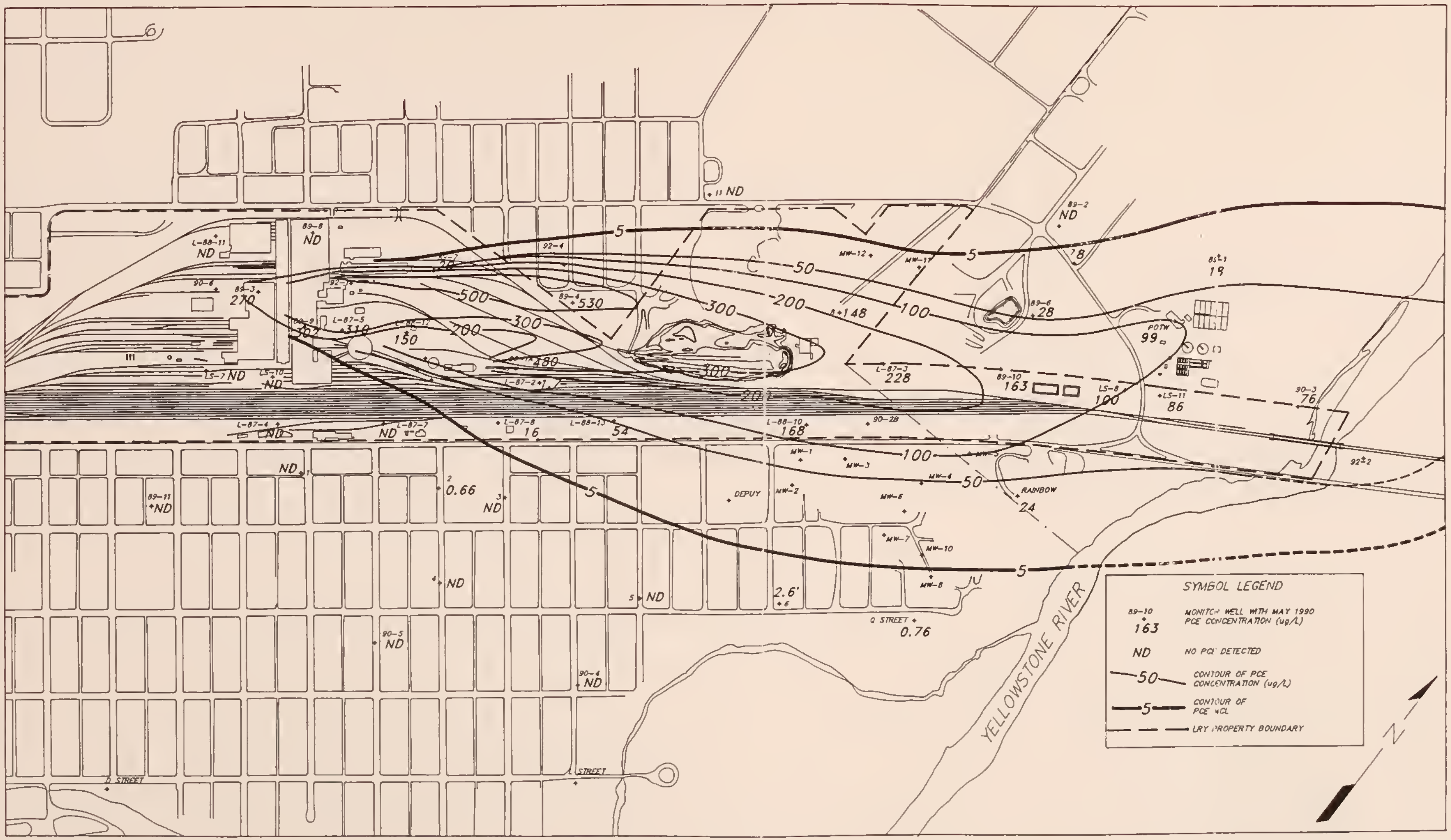
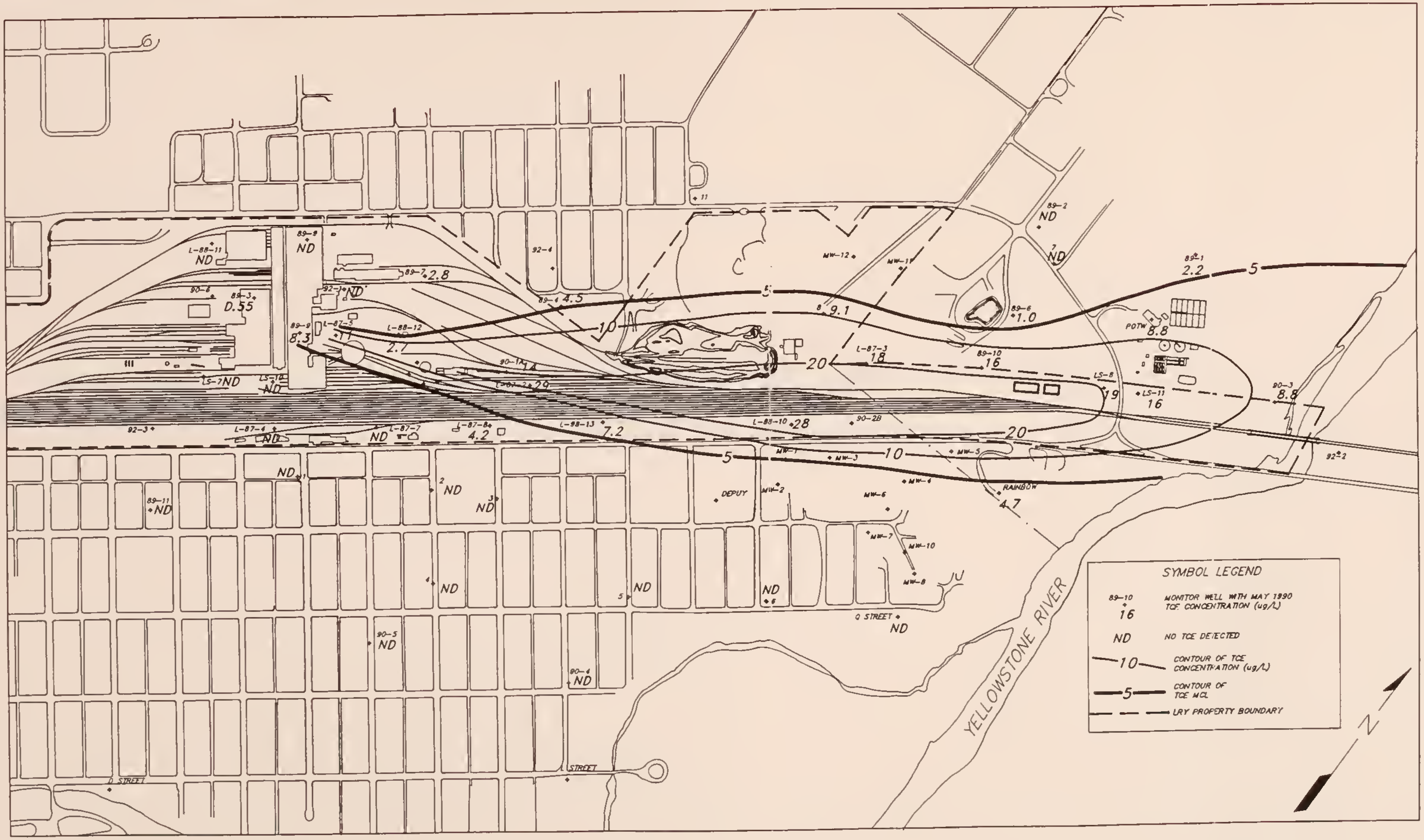
FIGURE 4.0



BURLINGTON NORTHERN	1994 ANNUAL GROUND WATER REPORT LIVINGSTON RAIL YARD LIVINGSTON, MONTANA	MAY 1990 PCE CONCENTRATIONS	
ENVIROCON, INC.	AutoCad FILE: GWR-005.DWG	10/13/94	FIGURE 5.0



600 0 600

SCALE IN FEET

BURLINGTON NORTHERN

ENVIROCON, INC.

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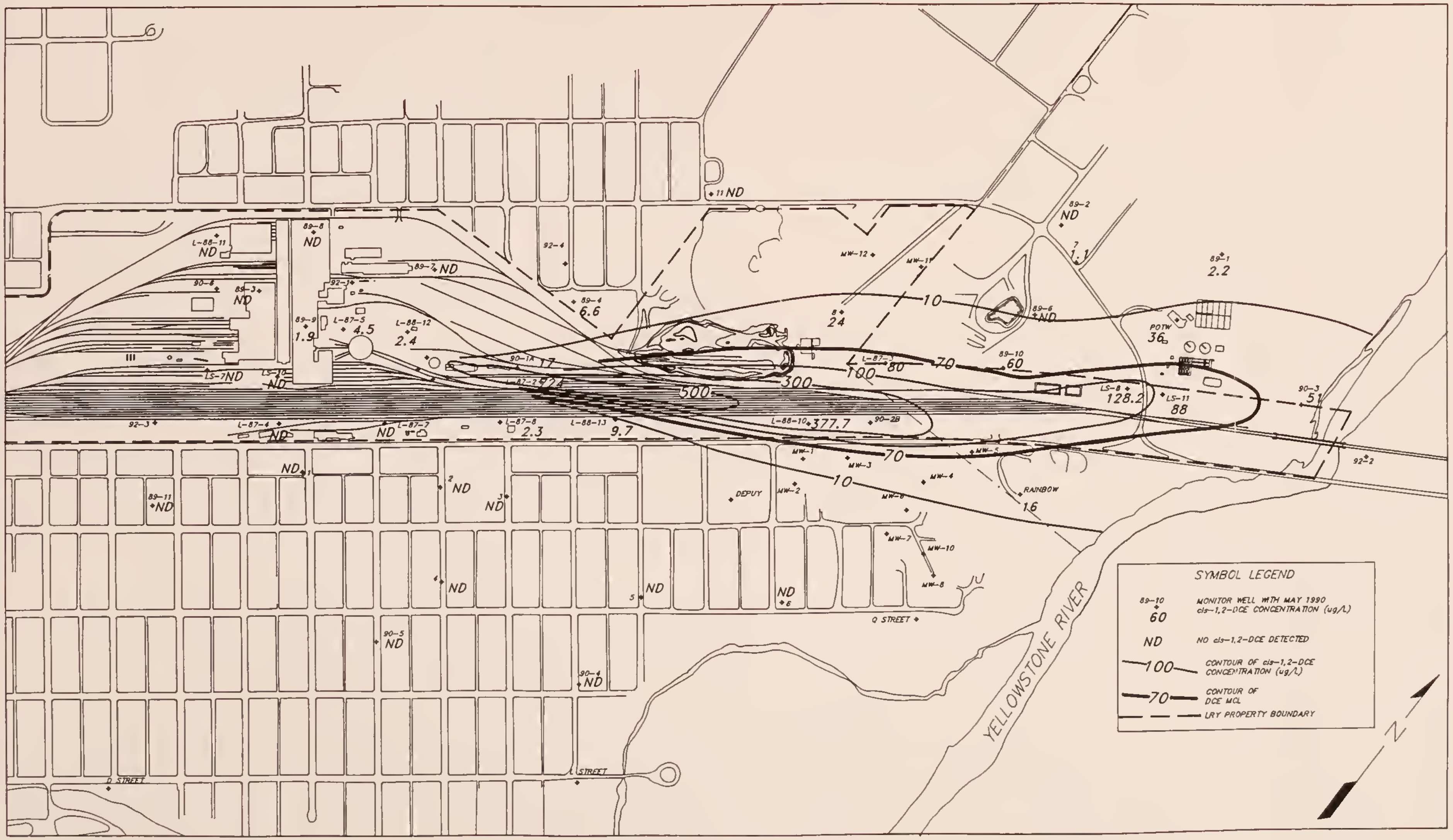
LIVINGSTON RAIL YARD
LIVINGSTON, MONTANA

AutoCad FILE: GWR-006.DWG

MAY 1990 TCE
CONCENTRATIONS

10/13/94

FIGURE 6.0



BURLINGTON NORTHERN

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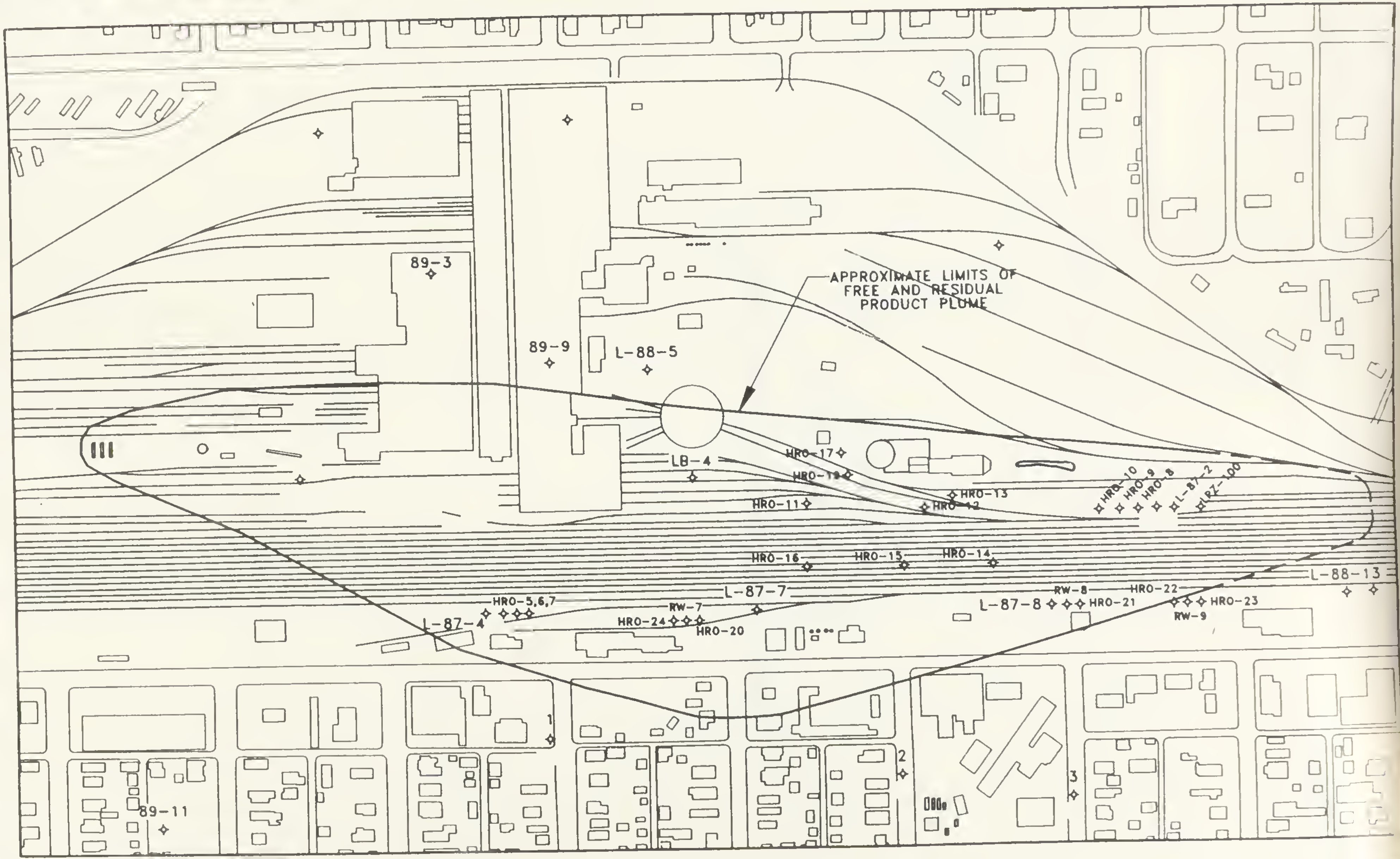
LIVINGSTON RAIL YARD
LIVINGSTON, MONTANA

MAY 1990 DCE
CONCENTRATIONS

AutoCad FILE: GWR-007.DWG

10/13/94

FIGURE 7.0



SYMBOL LEGEND

LPW-1 / 899 EXTENT OF FREE PRODUCT CONTAINING DETECTABLE CHLORINATED VOC's (ppm)
"ND" INDICATES NON-DETECATBLE
"NS" INDICATES NOT SAMPLED

<0.01 FREIGHT TRAIN PLUME BOUNDARY

APPROX. BOUNDARY OF FREE PRODUCT CONTAINING CHLORINATED VOC's

0 400
SCALE IN FEET

N

BURLINGTON NORTHERN

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1994 ANNUAL
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LIVINGSTON RAIL YARD
LIVINGSTON, MONTANA

AutoCad FILE: GWR-008.DWG

FREE AND RESIDUAL
PRODUCT PLUME

10/13/94

FIGURE 3.

APPENDIX A

FEBRUARY 1994

LABORATORY ANALYTICAL RESULTS

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

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March 11, 1994

H. Crowell Herrich
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On February 18, 1994, these samples, represented by our laboratory numbers 94-6540 through 94-6559, were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by: ______________________

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In 3/14/94

EPA WATER QUALITY CONTROL REFERENCE SAMPLE

Volatile Organic Compounds

This EPA Quality Control Sample was analyzed 02/23/94 with your lab nos. 94-6540 through 94-6559 with the following results:

Constituent	Spike Added, μg/l	P (%)	Range for P (%)
Carbon Tetrachloride	5.0	90	60-140
Chlorobenzene	5.0	99	60-140
1,3-Dichlorobenzene	5.0	106	60-140
1,4-Dichlorobenzene	5.0	104	60-140
1,2-Dichloroethane	5.0	98	60-140
1,1-Dichloroethene	5.0	123	60-140
trans-1,2-Dichloroethene	5.0	101	60-140
1,2-Dichloropropane	5.0	101	60-140
Ethylbenzene	5.0	109	60-140
Tetrachloroethene	5.0	99	60-140
1,1,2-Trichloroethane	5.0	81	60-140

P = Percent recovery measured.

m 3/14/

QUALITY ASSURANCE SPIKE ANALYSIS

This Quality Assurance Spike sample was analyzed 03/02/94 with your lab no. 94-6551 with the following results:

Parameter	Spike Amount, µg/l[(1)]	P (%)	Range for P (%)
Chlorobenzene	50	123	60-140
1,2-Dichlorobenzene	50	118	60-140
cis-1,2-Dichloroethylene	50	104	60-140
trans-1,2-Dichloroethylene	50	110	60-140
1,2-Dichloropropane	50	118	60-140
Ethylbenzene	50	108	60-140
Styrene	50	114	60-140
Tetrachloroethylene	50	104	60-140
Toluene	50	115	60-140
o-Xylene	50	115	60-140
p-Xylene	50	130	60-140

P = Percent recovery measured.

[(1)] Sample was diluted 10X before spiking.

REC'D [illegible] 1 4 1994

3/4

QUALITY ASSURANCE SPIKE ANALYSIS

This Quality Assurance Spike sample was analyzed 03/04/94 with your lab no. 94-6541 with the following results:

Parameter	Spike Amount, μg/l	P (%)	Range for P (%)
Chlorobenzene	5.0	94	60-140
1,2-Dichlorobenzene	5.0	105	60-140
cis-1,2-Dichloroethylene	5.0	78	60-140
trans-1,2-Dichloroethylene	5.0	98	60-140
1,2-Dichloropropane	5.0	101	60-140
Ethylbenzene	5.0	100	60-140
Styrene	5.0	100	60-140
Tetrachloroethylene	5.0	80	60-140
Toluene	5.0	96	60-140
o-Xylene	5.0	106	60-140
p-Xylene	5.0	124	60-140

P = Percent recovery measured.

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LAB NOS. 94-6540 -59

WATER VOLATILE SURROGATE RECOVERY

10 μg/l Surrogate Standard Spike

	------% recovery------		
SAMPLE NO.	S1 (TOL)	S2 (BFB)	S3 (DCE)
94-6540	97	108	80
94-6540 dup	96	102	94
94-6541	97	101	92
94-6542	93	101	89
94-6543	99	106	86
94-6544	96	104	81
94-6545	97	107	82
94-6546	98	109	82
94-6547	96	108	81
94-6548	96	98	82
94-6549	98	103	91
94-6550	100	94	97
94-6550 dup	98	97	88
94-6551	99	98	100
94-6552	96	101	88
94-6553	98	102	89
94-6554	90	89	91
94-6555	96	105	91
94-6556	98	105	91
94-6557	96	104	93
94-6558	98	99	90
94-6559	97	100	92
Blank I 02/23/94	97	102	85
Blank II 02/24/94	98	101	95
Blank III 02/24/94	97	99	96
Blank IV 02/25/94	100	103	92
Blank V 03/02/94	98	101	98

	QC LIMITS, % Recovery
S1 (TOL) = Toluene-d8	80-120
S2 (BFB) = Bromofluorobenzene	80-120
S3 (DCE) = 1,2-Dichloroethane-d4	80-120

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6540 dup
DATE: 03/11/94 da

QUALITY ASSURANCE DUPLICATE ANALYSIS

Livingston Rail Yard
140101-1265
Sampled 02/15/94 @ 1200
Submitted 02/18/94
Analyzed 02/24/94

90-6

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	0.55
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6540
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1265
Sampled 02/15/94 @ 1200
Submitted 02/18/94
Analyzed 02/23/94

90-6

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	1.1
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6541
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1266
Sampled 02/15/94 @ 1300
Submitted 02/18/94
Analyzed 02/23/94

L-87-8

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	4.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	5.2
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	7.7
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6542
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1267
Sampled 02/15/94 @ 1400
Submitted 02/18/94
Analyzed 02/23/94

92-3

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<0.50
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6543
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1268
Sampled 02/15/94 @ 1515
Submitted 02/18/94
Analyzed 02/23/94

89-2

CONSTITUENT	μg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<0.50
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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ADDRESS: Envirocon, Inc.
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LAB NO.: 94-6544
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1269
Sampled 02/15/94 @ 1600
Submitted 02/18/94
Analyzed 02/23/94

92-4

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	38(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	2.0
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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3/14/94

LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6545
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1270
Sampled 02/15/94 @ 1645
Submitted 02/18/94
Analyzed 02/23/94

89-4

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	150(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	2.0
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6546
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1271
Sampled 02/16/94 @ 0927
Submitted 02/18/94
Analyzed 02/23/94

92-2

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	3.6
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	32(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	3.3
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
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m 3/14/94

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6547
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1272
Sampled 02/16/94 @ 1010
Submitted 02/18/94
Analyzed 02/23/94

L-87-3

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	21
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	100(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	11
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
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LAB NO.: 94-6548
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1273
Sampled 02/16/94 @ 1100
Submitted 02/18/94
Analyzed 02/24/94

L-87-2

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	**44**[1]
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	**88**[1]
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	**3.1**
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	**2.9**
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	140[1]
trans-1,2-Dichloroethene	3.5
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<0.50
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	**13**
Trichlorofluoromethane	<1.0
Vinyl chloride	**15**
Dichlorodifluoromethane	<1.0

[1] Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6549
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1274
Sampled 02/16/94 @ 1136
Submitted 02/18/94
Analyzed 02/25/94

L-87-5

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	1.4
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	75(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	3.4
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6550 dup
DATE: 03/11/94 da

QUALITY ASSURANCE DUPLICATE ANALYSIS

Livingston Rail Yard
140101-1275
Sampled 02/16/94 @ 1212
Submitted 02/18/94
Analyzed 03/02/94

LS-11

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	60(1)
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	1.0
1,3-Dichlorobenzene	2.1
1,4-Dichlorobenzene	26(1)
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	30(1)
trans-1,2-Dichloroethene	1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	41(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	9.0
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6550
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1275
Sampled 02/16/94 @ 1212
Submitted 02/18/94
Analyzed 03/02/94

LS-11

CONSTITUENT	μg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	60(1)
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	1.0
1,3-Dichlorobenzene	2.0
1,4-Dichlorobenzene	27(1)
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	30(1)
trans-1,2-Dichloroethene	1.1
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	41(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	9.4
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6551
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1276
Sampled 02/16/94 @ 1416
Submitted 02/18/94
Analyzed 03/02/94

L-88-10

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	**4.5**
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	1.2
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	1.8
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	70(1)
trans-1,2-Dichloroethene	0.73
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	73(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	12
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1)Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
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LAB NO.: 94-6552
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1277
Sampled 02/16/94 @ 1524
Submitted 02/18/94
Analyzed 02/24/94

#5

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	0.63
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6553
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1278
Sampled 02/16/94 @ 1524
Submitted 02/18/94
Analyzed 02/24/94

#5
dup

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	0.65
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6554
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1279
Sampled 02/16/94 @ 1610
Submitted 02/18/94
Analyzed 02/24/94

Equip Blank

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	<0.50
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

ENERGY LABORATORIES

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6555
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1280
Sampled 02/16/94 @ 1630
Submitted 02/18/94
Analyzed 02/24/94

92-1

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	86(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

ENERGY LABORATORIES

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6556
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1281
Sampled 02/17/94 @ 0945
Submitted 02/18/94
Analyzed 02/25/94

89-3

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	210(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	0.63
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1)Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6557
DATE: 03/11/94 da

WATER ANALYSIS

89-3 dup

Livingston Rail Yard
140101-1282
Sampled 02/17/94 @ 0945
Submitted 02/18/94
Analyzed 02/25/94

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	190(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	0.58
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

m 3/14/94

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FAX (406) 252-6069 • 1-800 735 4489

RECE[illegible] MAR 1 [illegible] 1994

LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6558
DATE: 03/11/94 da

WATER ANALYSIS

89-9

Livingston Rail Yard
140101-1283
Sampled 02/17/94 @ 1115
Submitted 02/18/94
Analyzed 02/25/94

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	**96**(1)
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	3.5
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

(1) Value derived from a 10X dilution.

NOTE: This analysis is equivalent to EPA Methods 601/8010.

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FAX (406) 252 6069 • 1-800-735-4489

m 3/14/

RECE

LABORATORY REPORT

TO: H. Crowell Herrich
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

LAB NO.: 94-6559
DATE: 03/11/94 da

WATER ANALYSIS

Livingston Rail Yard
140101-1284
Sampled 02/17/94 @ 1210
Submitted 02/18/94
Analyzed 02/25/94

Trip Blank

CONSTITUENT	µg/l
Purgeable Halocarbons (EPA Method 624)	
Bromodichloromethane	<1.0
Bromoform	<1.0
Bromomethane	<1.0
Carbon tetrachloride	<0.50
Chlorobenzene	<1.0
Chloroethane	<1.0
2-Chloroethylvinyl ether	<1.0
2-Chlorotoluene	<1.0
Chloroform	<1.0
Chloromethane	<1.0
Dibromochloromethane	<1.0
1,2-Dichlorobenzene	<1.0
1,3-Dichlorobenzene	<1.0
1,4-Dichlorobenzene	<0.50
1,1-Dichloroethane	<1.0
1,2-Dichloroethane	<0.50
1,1-Dichloroethene	<0.50
cis-1,2-Dichloroethene	<1.0
trans-1,2-Dichloroethene	<1.0
1,2-Dichloropropane	<1.0
cis-1,3-Dichloropropene	<1.0
trans-1,3-Dichloropropene	<1.0
Methylene chloride	<1.0
1,1,2,2-Tetrachloroethane	<1.0
Tetrachloroethene	0.62
1,1,1-Trichloroethane	<0.50
1,1,2-Trichloroethane	<1.0
Trichloroethene	<0.50
Trichlorofluoromethane	<1.0
Vinyl chloride	<0.50
Dichlorodifluoromethane	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

APPENDIX B

MAY 1994

DATA VALIDATION AND ANALYTICAL RESULTS

DATA VALIDATION REPORT FOR GROUNDWATER ANALYSES
LIVINGSTON RAIL YARD, LIVINGSTON, MONTANA
MAY 1994 ANNUAL SAMPLING ROUND

1.0 INTRODUCTION

Data validation levels have been established for the sample round according to the criteria described in Appendix 1.A of the Remedial Investigation Report. The data validation levels and codes for the Livingston Rail Yard project are based on the U.S. Environmental Protection Agency Region VIII guidance, "Evaluation Criteria for Existing Data from CERCLA Study Areas", Revision 1, January 5, 1985.

Table 1 lists the samples taken during the May, 1994 annual sampling round.

Table 1. Samples collected for analyses during the May, 1994 Annual Sampling Round

Sample Station	Sample Type	Date Sampled	Date Analyzed	Envirocon Field ID #	Laboratory ID #
1	Primary Sample	05/09/94	05/20/94	140101-1307	94-18551
2	Primary Sample	05/06/94	05/20/94	140101-1304	94-18094
3	Primary Sample	05/06/94	05/20/94	140101-1303	94-18093
4	Primary Sample	05/05/94	05/18/94	140101-1294	94-18084
4	Primary Sample	05/05/94	05/19/94	140101-1295	94-18085
5	Primary Sample	05/05/94	05/19/94	140101-1296	94-18086
6	Primary Sample	05/06/94	05/20/94	140101-1305	94-18095
7	Primary Sample	05/10/94	05/21/94	140101-1318	94-18559
8	Primary Sample	05/05/94	05/19/94	140101-1297	94-18087
89-1	Primary Sample	05/05/94	05/19/94	140101-1299	94-18089
89-10	Primary Sample	05/09/94	05/21/94	140101-1309	94-18553
89-2	Primary Sample	05/05/94	05/19/94	140101-1298	94-18088
89-3	Primary Sample	05/10/94	05/21/94	140101-1325	94-18566
89-3	Field Duplicate	05/10/94	05/21/94	140101-1326	94-18567
89-4	Primary Sample	05/09/94	05/21/94	140101-1308	94-18552
89-6	Primary Sample	05/06/94	05/20/94	140101-1306	94-18096
89-7	Primary Sample	05/10/94	05/23/94	140101-1320	94-18561
89-9	Primary Sample	05/10/94	05/23/94	140101-1327	94-18568
90-2B	Primary Sample	05/09/94	05/21/94	140101-1314	94-18556
90-3	Primary Sample	05/09/94	05/21/94	140101-1312	94-18554
90-6	Primary Sample	05/04/94	05/18/94	140101-1291	94-18082
92-1	Primary Sample	05/10/94	05/23/94	140101-1321	94-18562
92-2	Primary Sample	05/05/94	05/19/94	140101-1300	94-18090
92-4	Primary Sample	05/05/94	05/19/94	140101-1301	94-18091
92-4	Field Duplicate	05/05/94	05/19/94	140101-1302	94-18092
94-1	Primary Sample	05/10/94	05/21/94	140101-1324	94-18565
94-2	Primary Sample	05/05/94	05/18/94	140101-1293	94-18083
B-Street	Primary Sample	05/10/94	05/21/94	140101-1322	94-18563
L-87-3	Primary Sample	05/09/94	05/21/94	140101-1317	94-18558
L-87-4	Primary Sample	05/04/94	05/17/94	140101-1285	94-18074
L-87-5	Primary Sample	05/10/94	05/21/94	140101-1319	94-18560
L-87-7	Primary Sample	05/04/94	05/17/94	140101-1286	94-18075
L-87-8	Primary Sample	05/04/94	05/18/94	140101-1287	94-18076
L-88-10	Primary Sample	05/09/94	05/21/01	140101-1316	94-18572
L-88-13	Primary Sample	05/09/94	05/21/94	140101-1315	94-18557
LS-11	Primary Sample	05/09/94	05/20/94	140101-1310	94-18570
LS-11	Field Duplicate	05/09/94	05/20/02	140101-1311	94-18571
LS-6	Primary Sample	05/04/94	05/18/01	140101-1292	94-18078
Rainbow	Primary Sample	05/10/94	05/21/94	140101-1323	94-18564

2.0 EVALUATION OF BLANK ANALYSES

Laboratory, equipment, and trip blanks analyzed for this sampling round are summarized in Table 2. Only one contaminant was found in the blanks analyzed for the May, 1994 sampling round. The equipment blank (sample number 140101-1313, lab number 94-18555) taken on 09-May-94 had a measurable quantity of 0.52 ug/L of Chloroform over a detection limit of 0.50 ug/L. However, of all the samples analyzed during the May, 1994 sample round, this was the only detection of Chloroform encountered. Consequently, validation levels for other analyses were not altered due to this sample result. All blank analyses are presented at the end of this report.

Table 2. Laboratory and Trip Blanks analyzed during the May, 1994 Annual Sampling Round

Sample Station	Sample Type	Date Sampled	Date Analyzed	Envirocon Field ID #	Laboratory ID #
Blank	Equipment Blank	05/09/94	05/21/94	140101-1313	94-18555
Blank	Field (Trip) Blank	05/23/94	05/23/94	Trip Blank	94-18079
Blank	Field (Trip) Blank	05/23/94	05/23/94	Trip Blank	94-18097
Blank	Field (Trip) Blank	05/24/94	05/24/94	Trip Blank	94-18569

3.0 EVALUATION OF DUPLICATE ANALYSES

Field and laboratory duplicates collected during the May, 1994 sampling round are summarized in Table 3. All duplicates had analyte concentrations with relative percent differences (RPD) less than 30%.

Table 3. Duplicate Samples analyzed during the May, 1994 Annual Sampling Round

Sample Station	Sample Type	Date Sampled	Date Analyzed	Envirocon Field ID #	Laboratory ID #
89-3	Primary Sample	05/10/94	05/21/94	140101-1325	94-18566
89-3	Field Duplicate	05/10/94	05/21/94	140101-1326	94-18567
92-4	Primary Sample	05/05/94	05/19/94	140101-1301	94-18091
92-4	Field Duplicate	05/05/94	05/19/94	140101-1302	94-18092
LS-11	Primary Sample	05/09/94	05/20/94	140101-1310	94-18570
LS-11	Field Duplicate	05/09/94	05/20/02	140101-1311	94-18571

4.0 EVALUATION OF HOLDING TIMES

Holding times for samples taken during the May, 1994 sampling event were examined for exceedences. All all samples were analyzed within recommended holding time limits.

5.0 EVALUATION OF QUALITY ASSURANCE SPIKE ANALYSIS RESULTS

All quality assurance blank spike and matrix spike analyses for the May, 1994 sample round were within acceptable percent recovery limits. Results are presented at the end of this report.

6.0 EVALUATION OF WATER VOLATILE SURROGATE RECOVERY RESULTS

All water volatile surrogate recoveries for the May, 1994 sample round were within acceptable percent recovery limits. Results are presented at the end of this report.

8.0 VALIDATION LEVEL ASSIGNMENTS

All analytical results for the May, 1994 sampling round are acceptable for quantitative data analysis.

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FAX (406) 252-6069 • 1-800-735-4489

June 1, 1994

H.C. Herrick
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On May 9, 1994, these samples, represented by our laboratory numbers 94-18074 through 94-18097 were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by:____________________

ENERGY LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 17-MAY-1994 21:44
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/051794.b/17May1101011.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
--------------------OTHER EPA LISTED VOC'S--------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

Report Date: 05/18/94

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.11	91	80--120
Toluene d8	10.0	9.66	97	80--120
p-Bromofluorobenzene	10.0	9.99	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: Reviewing Supervisor:

ENERGY LABORATORIES
ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 04 MAY 94 11:40
Date Received: 06 MAY 94
Analysis Date: 17 MAY 1994 [illegible]
File: /chem/5971A.17051794.b/17May1201012.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1285

Lab No.: 94-18074
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER

L-87-4

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	[illegible]	70	[illegible]	U
trans-1,2-Dichloroethene	156-60-5	100	[illegible]	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
----------------REGULATED VOC'S: TRIHALOMETHANES----------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
---------------------OTHER EPA LISTED VOC'S---------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	[illegible]	[illegible]	[illegible]	[illegible]
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.44	94	80--120
Toluene d8	10.0	9.72	97	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: ____ Reviewing Supervisor: ____

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
[illegible]
[illegible]

Client: Envirocon, Inc.
Date Sampled: 04-MAY-94 12:31
Date Received: 09-MAY-94
Analysis Date: 17-MAY-1994 23:52
File: /chem/5971A.i/051794.b/17May1401014.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1286

L-87-7

Lab No.: 94-18075
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	**71-43-2**	**5**	**<0.50**	**0.25J**
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	**100-41-4**	**700**	**1.7**	
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	**95-47-6**		**0.64**	
Total Xylenes		**10000**	**0.64**	
REGULATED VOC'S, TRIHALOMETHANES				
Bromodichloromethane	75-27-4	total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethano	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	**104-51-8**	**NR**	**1.1**	
sec-Butylbenzene	**135-98-8**	**NR**	**5.1**	
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	**95-49-8**	**NR**	**0.78**	
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	**98-82-8**	**NR**	**6.3**	
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	**91-20-3**	**NR**	**3.8**	
n-Propylbenzene	**103-65-1**	**NR**	**1.4**	
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.45	84	80--120
Toluene d8	10.0	9.95	99	80--120
p-Bromofluorobenzene	10.0	10.9	109	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS:

Sample exhibited a significant hydrocarbon response.

Analyst: CHH Reviewing Supervisor: wm

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107 0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 04-MAY-94 13:18
Date Received: 09-MAY-94
Analysis Date: 18-MAY-1994 01:19
File: /chem/5971A.i7051794.b/17May1601016.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1287

L-87-8

Lab No.: 94-18076
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	70	1.5	
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	5	14	
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	5	5.5	
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	**95-47-6**		<0.50	0.24J
Total Xylenes		10000	<0.50	0.24J
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	**67-66-3**	100	<0.50	0.16J
--------------------OTHER EPA LISTED VOC'S--------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	**135-98-8**	**NR**	**<0.50**	0.38J
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

Lab No.: 94-18076
Sample Info: 140101-1287

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	**95-63-6**	**NR**	**<0.50**	**0.18J**
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.50	95	80--120
Toluene d8	10.0	9.80	98	80--120
p-Bromofluorobenzene	10.0	11.2	112	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
NR= No currently regulated amount.
NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS:

Sample exhibited a significant hydrocarbon response.

Analyst: CHA   Reviewing Supervisor: WTM

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107 0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 18-MAY-1994 11:46
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i7051894.b/18May0301003.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
--------------------OTHER EPA LISTED VOC'S--------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

Report Date: 05/18/94

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.52	95	80--120
Toluene d8	10.0	9.78	98	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WM

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 04-MAY-94 16:02
Date Received: 09-MAY-94
Analysis Date: 18-MAY-1994 18:40
File: /chem/5971A.i/051894.b/18May1101011.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1291

90-6

Lab No.: 94-18082
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.66	97	80--120
Toluene d8	10.0	10.3	103	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTM

ENERGY
LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 04-MAY-94 09:20
Date Received: 09-MAY-94
Analysis Date: 18-MAY-94 12:36
File: /chem/5971A.i/051894.b/18May0401004.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1292

Lab No.: 94-18078
Report Date: 05/18/94
Extraction Method: EPA 5030
Sample Matrix: WATER

LS-6

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U
1,2-Dibromoethane	106-93-4	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.53	95	80--120
Toluene d8	10.0	9.55	96	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS:

Sample exhibited a significant hydrocarbon response.

Analyst: ______ Reviewing Supervisor: ______

ENERGY
LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 23-MAY-1994 11:54
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i7052394.b/23May0501005.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.75	98	80--120
Toluene d8	10.0	9.58	96	80--120
p-Bromofluorobenzene	10.0	9.79	98	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled:
Date Received: 09-MAY-94
Analysis Date: 23-MAY-1994 13:15
File: /chem/5971A.i/052394.b/23May0701007.d
Project Info: Livingston Rail Yard
Sample Info: Trip Blank

Lab No.: 94-18079
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

Lab No.: 94-18079
Sample Info: Trip Blank

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.26	93	80--120
Toluene d8	10.0	9.82	98	80--120
p-Bromofluorobenzene	10.0	9.84	98	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor:

ENERGY LABORATORIES
ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 18-MAY-1994 16:20
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/051894.b/18May0801008b.d

Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CJH Reviewing Supervisor: WM

ENERGY LABORATORIES
ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 10:00
Date Received: 06 MAY 94
Analysis Date: 18-MAY-1994 21:26
File: /chem/5971A.i/051894.b/18May1501015.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1293

Lab No.: 94-18083
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

94-2

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.50**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.2	102	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	9.85	98	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTM

ENERGY LABORATORIES

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P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-8325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 10:52
Date Received: 09-MAY-94
Analysis Date: 18-MAY-1994 22:48
File: /chem/5971A.i/051894.b/18May1701017.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1294

Lab No.: 94-18084
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#4

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.68**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.1	101	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: ________

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.

P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4469

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 10:52
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 00:14
File: /chem/5971A.i/051894.b/18May1901019.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1295

Lab No.: 94-18085
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#4

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.68**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.5	105	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH

Reviewing Supervisor: WTM

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 19-MAY-1994 12:21
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/051994.b/19May0401004a.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 11:39
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 13:04
File: /chem/5971A.i/051994.b/19May0501005.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1296

Lab No.: 94-10006
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#5

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.64**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.95	99	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	9.92	99	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WB

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 13:47
Date Received: 09-MAY-94
Analysis Date: 10-MAY-1994 [illegible]
File: /chem/4971A.i/051994.b/10May0901009.d
Project Info: Livingston Mall Vath
Sample Info: 140101-1297

Lab No.: 94-18087
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

11 8

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**3.3**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**50**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.8**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.1	101	80 120
Toluene d8	10.0	10.1	101	80 120
p-Bromofluorobenzene	10.0	9.98	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHH
Reviewing Supervisor: WOD

ENERGY LABORATORIES

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P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 14:17
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 13:47
File: /chem/5971A.i/051994.b/19May0601006.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1298

Lab No.: 94-18088
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-2

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Trichlorofluoromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

---- SURROGATE RECOVERY REPORT --------

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane-d4	10.0	9.1	91	80--120
Toluene-d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0918 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 14:55
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 14:30
File: /chem/5971A.i/051994.b/19May0701007.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1299

Lab No.: 94-18089
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-1

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**<0.50**	**0.26J**
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**6.9**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.78	98	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: CJH
Reviewing Supervisor: WM

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LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 15:28
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 17:16
File: /chem/5971A.i/051994.b/19May1101011.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1300

Lab No.: 94-18090
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

92-2

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**4.2**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**15**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.0**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.2	102	80--120
Toluene d8	10.0	9.98	100	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: wm

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Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 15:28
Date Received: 09-MAY-94
Analysis Date: 24-MAY-1994 18:54
File: /chem/5971A.i/052494.b/24May1301013.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1300

Lab No.: 94-18090 duplicate
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

92-2 Lab dup

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**4.4**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**21**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.0**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.8	108	80--120
Toluene d8	10.0	9.66	97	80--120
p-Bromofluorobenzene	10.0	9.79	98	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: WM

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Client: Envirocon, Inc.
Date Sampled: 05-MAY-94 16:22
Date Received: 09-MAY-94
Analysis Date: 10-MAY-1994 18:40
File: [illegible]
Project Info: Livingston Rail Yard
Sample Info: 140101-1301

Lab No.: 94-10091
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

12-1

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**<0.50**	**0.21J**
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**35**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**1.8**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.2	102	80--120
Toluene d8	10.0	9.98	100	80--120
p-Bromofluorobenzene	10.0	9.95	99	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: ____________ Reviewing Supervisor: ____________

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Client: Envirocon, Inc.
Date Sampled: 05 MAY-94 16:32
Date Received: 09-MAY-94
Analysis Date: 19-MAY-1994 15:01
File: /chem/5971A.17051994.b/19May1501015.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1302

Lab No.: 94-18092
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER

92-4
Dup.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**32**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**1.8**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.87	99	80--120
Toluene d8	10.0	9.96	100	80--120
p-Bromofluorobenzene	10.0	9.87	99	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH
Reviewing Supervisor: WB

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Quality Control Sample: Laboratory Reagent Blank 20-MAY-1994 16:45
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May200101001.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.64	96	80--120
Toluene d8	10.0	9.64	96	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

ENERGY LABORATORIES

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Client: Envirocon, Inc.
Date Sampled: 06-MAY-94 09:34
Date Received: 09-MAY-94
Analysis Date: 20-MAY-1994 17:29
File: /chem/5971A.i/052094.b/May200201002.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1303

Lab No.: 94-18093
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#3

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.68**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.70	97	80--120
Toluene d8	10.0	9.72	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

EPA METHOD 624 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 20-MAY-1994 22:49
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May201001010.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.14	103	60--140
Chlorobenzene	5.00	4.60	92	60--140
1,4-Dichlorobenzene	5.00	4.73	95	60--140
1,2-Dichloroethane	5.00	5.20	104	60--140
1,1-Dichloroethane	5.00	5.47	109	60--140
trans-1,2-Dichloroethene	5.00	4.84	97	60--140
1,2-Dichloropropane	5.00	4.39	88	60--140
Ethyl benzene	5.00	4.88	98	60--140
Tetrachloroethene	5.00	4.64	93	60--140
1,1,2-Trichloroethane	5.00	4.45	89	60--140
1,3-Dichlorobenzene	5.00	4.90	98	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.98	100	80--120
Toluene d8	10.0	9.75	98	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WKB

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Quality Control Sample: Laboratory Reagent Blank 20-MAY-1994 04:44
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/051994.b/19May2801028.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.46	95	80--120
Toluene d8	10.0	9.79	98	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

ENERGY LABORATORIES

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Client: Envirocon, Inc.
Date Sampled: 06-MAY-94 11:31
Date Received: 09-MAY-94
Analysis Date: 20-MAY-1994 06:45
File: /chem/5971A.i/051994.b/19May3101031.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1304

Lab No.: 94-18094
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#2

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**20**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**[illegible]**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Trichlorofluoromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.82	98	80--120
Toluene d8	10.0	9.67	97	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WM

ENERGY LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 06-MAY-94 15:45
Date Received: 09-MAY-94
Analysis Date: 20-MAY-1994 08:11
File: /chem/5971A.i/052094.b/20May0101001.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1305

Lab No.: 94-18095
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#6

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**1.1**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.15	92	80--120
Toluene d8	10.0	9.96	100	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WM

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Client: [illegible]
Date Sampled: 06-MAY-94 16:15
Date Received: 09-MAY-94
Analysis Date: 20-MAY-1994 05:23
File: /chem/5971A.i/051994.b/19May2901029.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1306

Lab No.: [illegible]
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624

89-6

VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**1.00**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
[illegible]	[illegible]	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
[illegible]	[illegible]	[illegible]	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.56	96	80--120
Toluene d8	10.0	9.60	96	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WJM

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Quality Control Sample: Laboratory Reagent Blank 23-MAY-1994 10:07
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052394.b/23May0301003.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.21	92	80--120
Toluene d8	10.0	9.75	98	80--120
p-Bromofluorobenzene	10.0	9.90	99	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHK Reviewing Supervisor: ______

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Client: Envirocon, Inc.
Date Sampled:
Date Received: 09-MAY-94
Analysis Date: 23-MAY-1994 13:56
File: /chem/5971A.i/052394.b/23May0801008.d
Project Info: Livingston Rail Yard
Sample Info: Trip Blank

Lab No.: 94-18097
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.57	86	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH　Reviewing Supervisor:

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EPA METHOD 624 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 25-MAY-1994 23:39
Lab No.: 94-18091
Report Date: 05/26/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052594.b/9418091s.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodolgy.

CONCENTRATION UNITS = ug/L

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Chlorobenzene	50.0	<5.00	47.6	95	60--140
1,2-Dichlorobenzene	50.0	<5.00	48.0	96	60--140
cis-1,2-Dichloroethene	50.0	<5.00	48.3	97	60--140
trans-1,2-Dichloroethene	50.0	<5.00	52.9	106	60--140
1,2-Dichloropropane	50.0	<5.00	47.6	95	60--140
Tetrachloroethene	50.0	35.4	83.9	97	60--140

REPORT COMMENTS: The sample was diluted 10 X before spiking.

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June 6, 1994

H. Crowell Herrick
Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

On May 12, 1994, these samples, represented by our laboratory numbers 94-18551 through 94-18577 were submitted to our laboratory for analysis.

The test results and quality assurance were reviewed and approved by the undersigned.

Reviewed by:________________________

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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LABORATORY REPORT

DATE: 06/07/94 ds

TO: H. Crowell Herrick
ADDRESS: Envirocon, Inc.
P.O. Box 1154
Livingston, MT 59047

WATER ANALYSIS

Livingston Rail Yard
Sampled: 05/04/94
Submitted: 05/12/94

Identification Lab No.	Date Extracted	Date Analyzed	mg/Liter (ppm) Diesel Range Organics	mg/Liter (ppm) Diesel Range Organics as Diesel	mg/Liter (ppm) Total Extractable Hydrocarbons	(1) Surrogate Recovery, %
7-4 140101-1285, Sampled @ 1150 94-18574	05/12/94	05/18/94	<0.55	<0.55	<0.55	106
87-7 140101-1286, Sampled @ 1231 94-18575	05/12/94	05/18/94	2.0	2.0	2.3	103
87-8 140101-1287, Sampled @ 1318 94-18576	05/12/94	05/20/94	30	30	34	74
-87-2 140101-1288, Sampled @ 1404 94-18577	05/12/94	05/19/94	1.8	1.8	2.1	118
Method Blank	05/12/94	05/18/94	<0.50	<0.50	<0.50	96

COMMENTS:
(1) Surrogate added to the sample for quality assurance purposes

NOTE1: Diesel Range Organics are defined as all hydrocarbons eluting between C10 and C28.

NOTE2: Diesel Range Organics as Diesel Fuel are defined by the analyst as that portion of the chromatogram between C10 and C28 that resembles diesel fuel

NOTE3: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time. This value is equivalent to EPA method 8015 Modified TPH as Diesel.

File No. 18574-7

DIESEL RANGE ORGANICS CONTINUING CALIBRATION REPORT

This continuing calibration report applies to the following analysis runs:
Method Blk, Blk Spk, 94-18574,75,77

Sample Name: cc dro 200 std
Area File: C:\DIRECT\DATA3\0518DRO.02A
Date & Time Collected: May 18, 1994 19:00:39
Method File: C:\DIRECT\DATA3\DRO.MET
Calibration File: C:\DIRECT\DATA3\DRO0517.CAL

COMPOUND	ACTUAL (UG/ML)	MEASURED (UG/ML)	%RECOVERY	%RECOVERY LIMITS
n-Decane	200	176	88	75-125
n-Dodecane	200	182	91	75-125
n-Tetradecane	200	190	95	75-125
n-Hexadecane	200	[illegible]	[illegible]	75-125
n-Octadecane	200	202	101	75-125
n-Eicosane	200	199	99	75-125
n-Docosane	200	194	97	75-125
n-Tetracosane	200	182	91	75-125
n-Hexacosane	200	173	86	75-125
n-Octacosane	200	154	77	75-125
TOTAL DRO	2000	1852	93	75-125

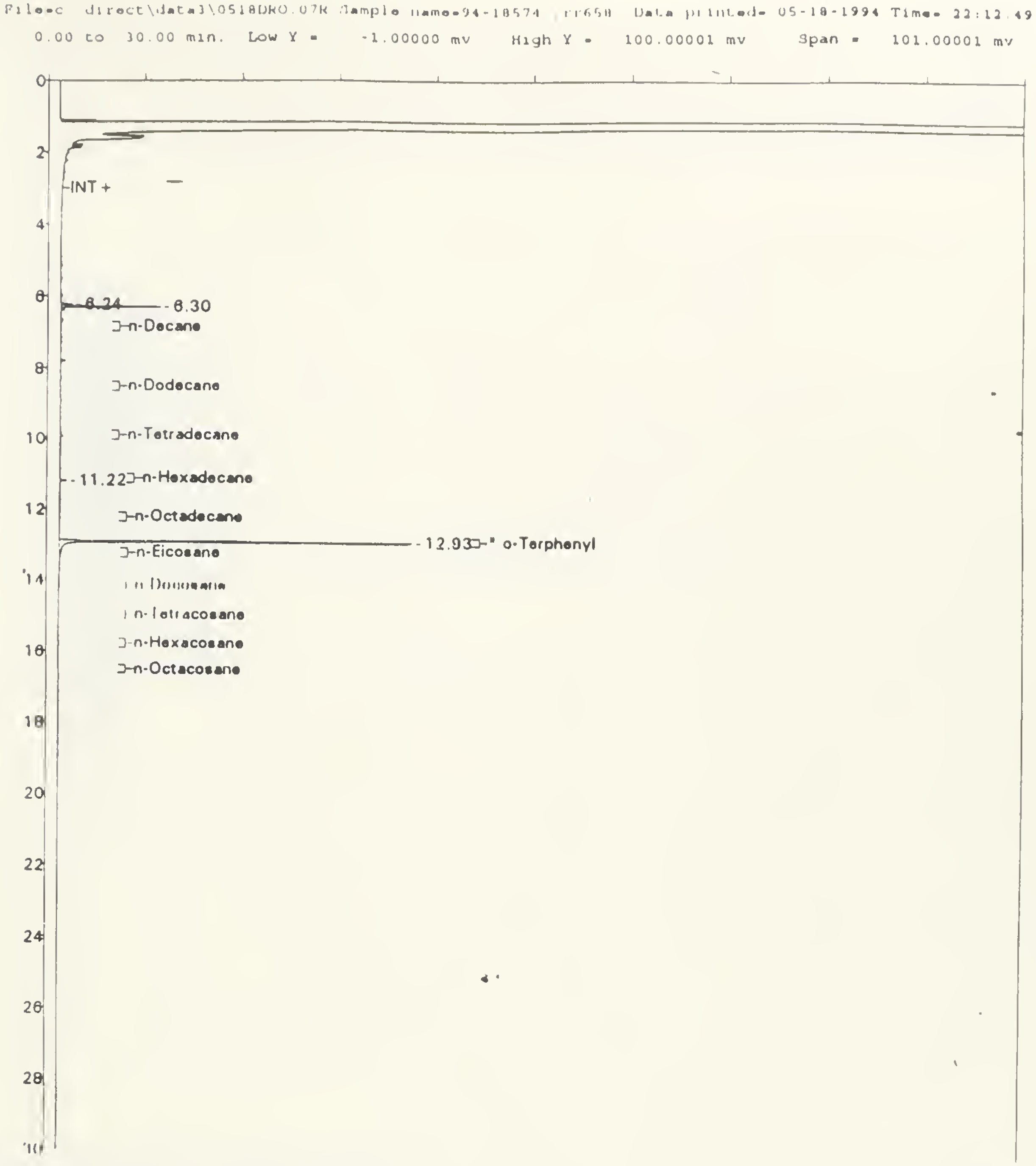
SURROGATE CMPND	ACTUAL (UG/ML)	MEASURED (UG/ML)	%RECOVERY	%RECOVERY LIMITS
* o-Terphenyl	200	199	99	75-125

LABORATORY CONTROL SAMPLE REPORT

Date Analyzed: May 18, 1994 20:56:17

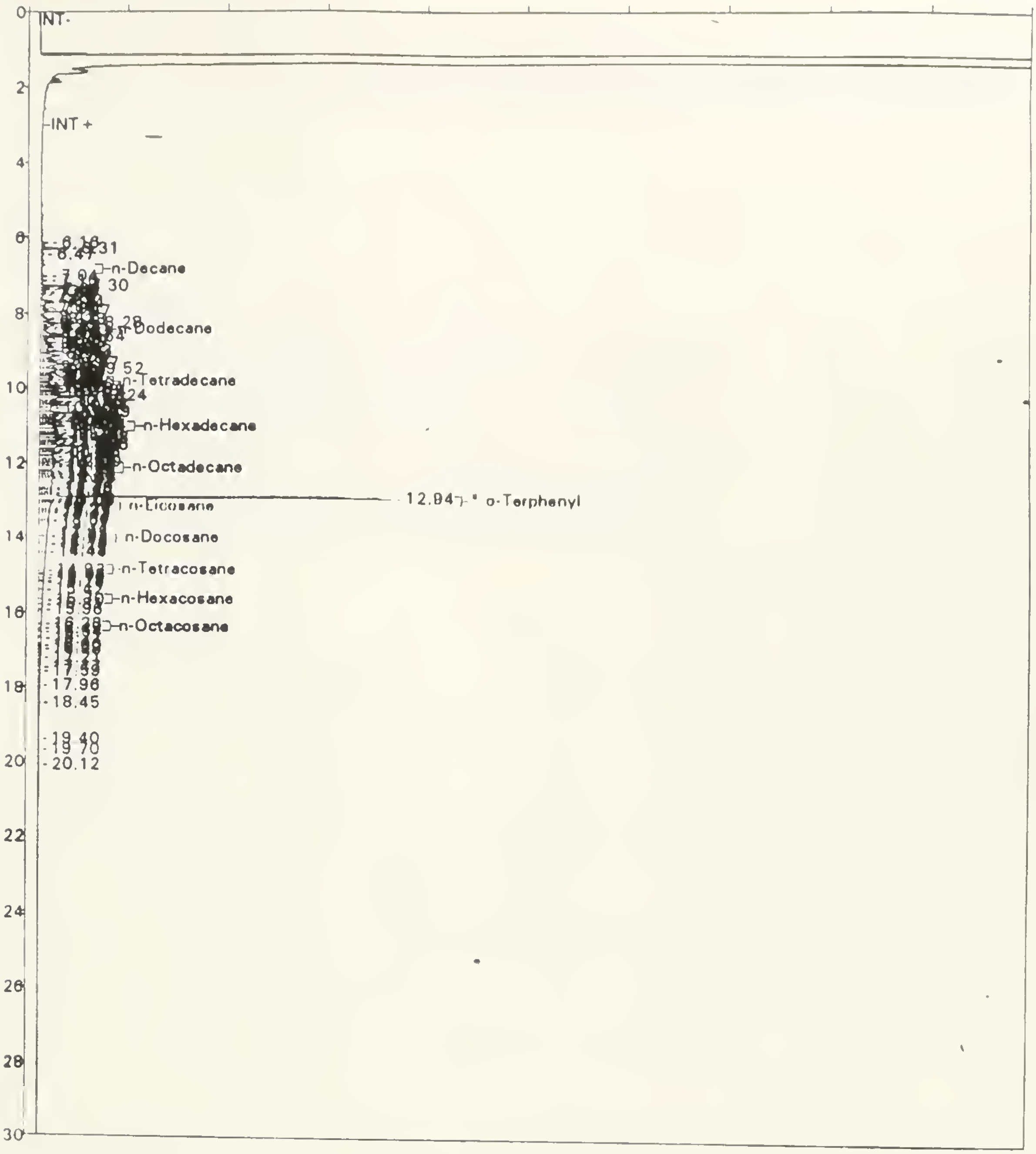
	ACTUAL (UG/ML)	MEASURED (UG/ML)	%RECOVERY	%RECOVERY LIMITS
#2 Diesel Fuel	15000	14877	99	50-150

```
                    DIESEL RANGE ORGANICS CONTINUING CALIBRATION REPORT

This continuing calibration report applies to the following analysis runs:
4 18576


Sample Name: cc dro std
Area File: C:\DIRECT\DATA3\0520DRO.01A
Date & Time Collected: May 20, 1994  09:42:54
Method File: C:\DIRECT\DATA3\DRO.MET
Calibration File: C:\DIRECT\DATA3\DRO0519.CAL


COMPOUND          ACTUAL(UG/ML) MEASURED(UG/ML) %RECOVERY  %RECOVERY LIMITS
================= ============= =============== =========  =================
n-Decane               200           156            78         75-125
n-Dodecane             200           150            75         75-125
n-Tetradecane          200           156            78         75-125
n-Hexadecane           200           162            81         75-125
n-Octadecane           200           164            82         75-125
n-Eicosane             200           180            90         75-125
n-Docosane             200           189            95         75-125
n-Tetracosane          200           189            95         75-125
n-Hexacosane           200           191            96         75-125
n-Octacosane           200           192            96         75-125
TOTAL DRO             2000          1723            86         75-125


SURROGATE CMPND   ACTUAL(UG/ML) MEASURED(UG/ML) %RECOVERY  %RECOVERY LIMITS
================= ============= =============== =========  =================
* o-Terphenyl          200           164            82         75-125
```



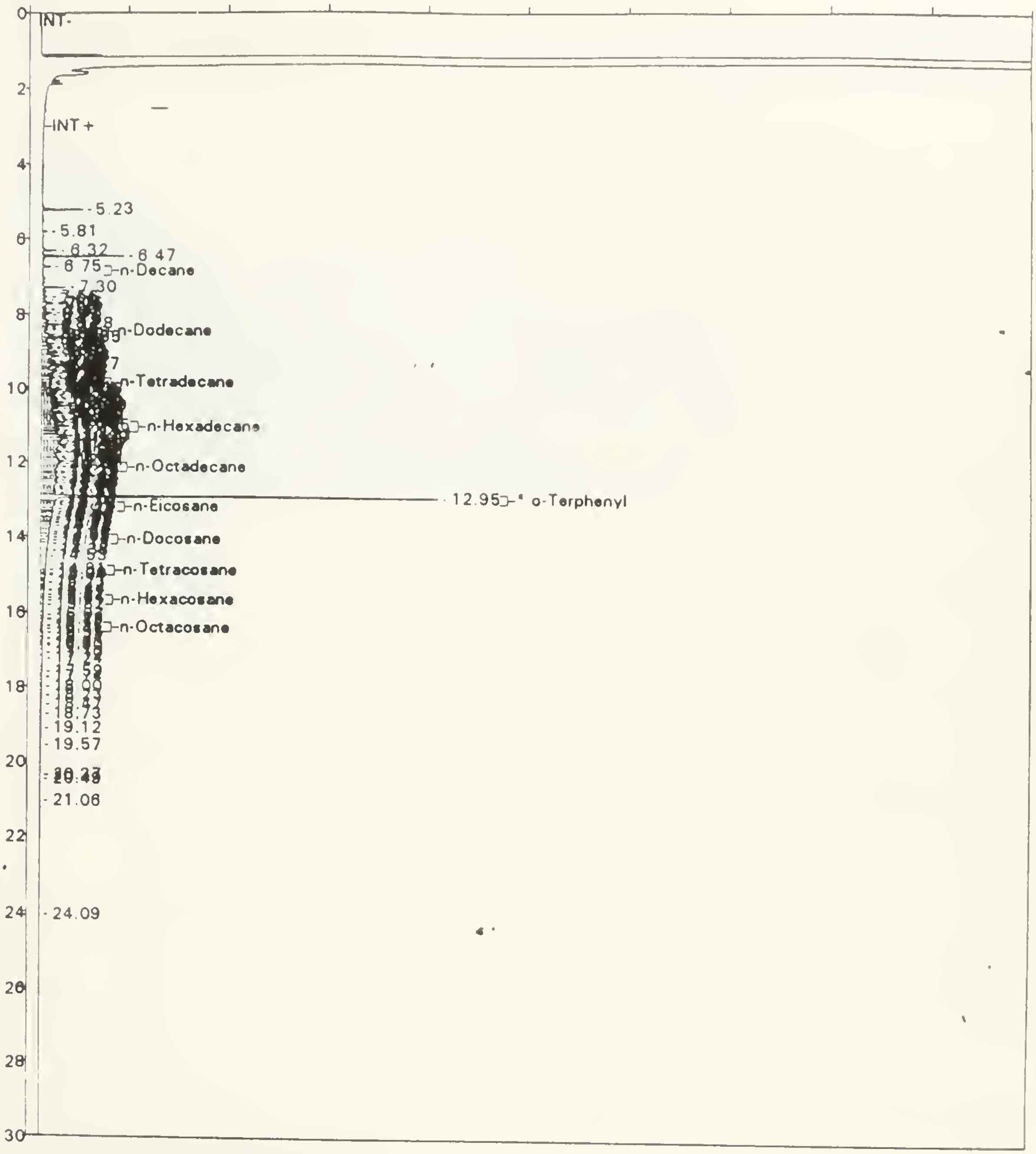
```
IESEL RANGE ORGANICS CHROMATOGRAM
ample Name: 94-18574 ;rr658
rea File: C:\DIRECT\DATA3\0518DRO.07A
ate & Time Collected: May 18, 1994  22:12:35
ethod File: C:\DIRECT\DATA3\DRO.MET
alibration File: C:\DIRECT\DATA3\DRO0517.CAL
ample Weight: 910                            Dilution: 1
eaks subtracted from Total:
ompound Name       RT      Area      Amount    %Recovery
=============     =====  ======== ======== =========
 o-Terphenyl      12.9    70,392     211       106
RO Area            8,412     DRO AMOUNT            0.03
EH Area           34,094     TEH AMOUNT            0.12
```

```
ile=C \CP\DATA1\0518DRO 09R Date printed=05-25-1994 Time= 11 00 05
ample Name=94-18575 ,rr658
.0 to 30.0 min. Low Y=-1.0 High Y=100.0 mv Span=101.0
```



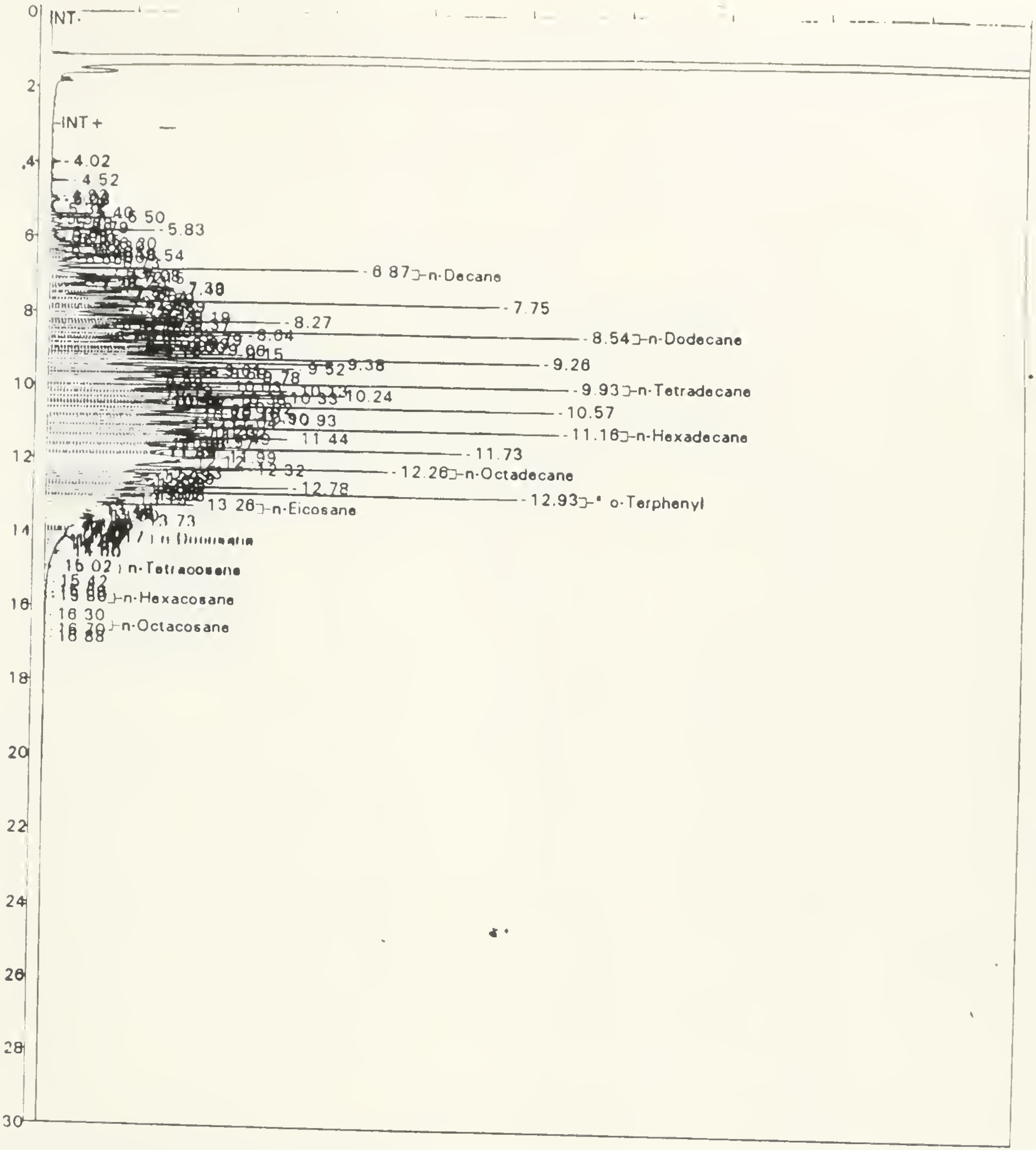
```
IESEL RANGE ORGANICS CHROMATOGRAM
ample Name: 94-18575 ;rr658
rea File: C:\CP\DATA1\0518DRO.09A
ate & Time Collected: May 18, 1994  23:29:13
ethod File: C:\CP\DATA1\DRO1.MET
alibration File: C:\CP\DATA1\DRO0517.CAL
ample Weight: 860                              Dilution: 1
eaks subtracted from Total:
ompound Name      RT      Area      Amount    %Recovery
==============   =====  ======== ======== =========
 o-Terphenyl      12.9    68,851     206        103
RO Area          566,724     DRO AMOUNT              2.03
EH Area          629,436     TEH AMOUNT              2.26
```

```
File=C:\CP\DATA1\0518DRO.13R Date printed=05-25-1994 Time= 11:00:44
Sample Name=94-18577 ;rr658
.0 to 30.0 min. Low Y=-1.0 High Y=100.0 mv Span=101.0
```



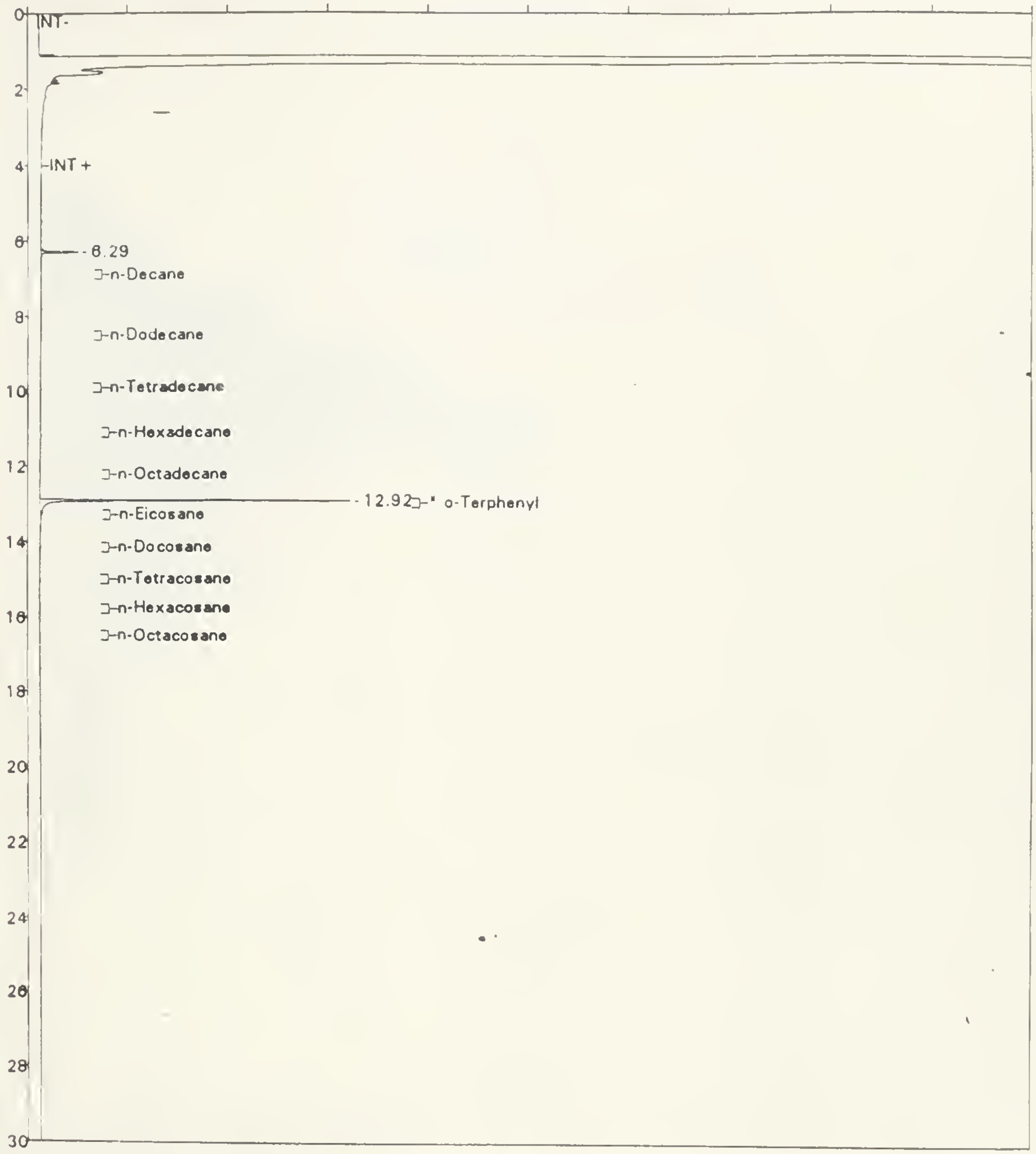
```
DIESEL RANGE ORGANICS CHROMATOGRAM
Sample Name: 94-18577 ;rr658
Area File: C:\CP\DATA1\0518DRO.13A
Date & Time Collected: May 19, 1994  02:01:41
Method File: C:\CP\DATA1\DRO1.MET
Calibration File: C:\CP\DATA1\DRO0517.CAL
Sample Weight: 920                          Dilution: 1
Peaks subtracted from Total:
Compound Name      RT     Area      Amount    %Recovery
==============    =====  ========  ========  =========
  o-Terphenyl      12.9    78,715     236        118
DRO Area         544,509     DRO AMOUNT             1.83
TEH Area         634,712     TEH AMOUNT             2.13
```

```
ile=C \CP\DATA1\0518DRO.05R Date printed=05-25-1994 Time= 11:13:22
ample Name=lc Blank spk 12May94 1000ml
.0 to 30.0 min, Low Y=-1.0 High Y=100.0 mv Span=101.0
```



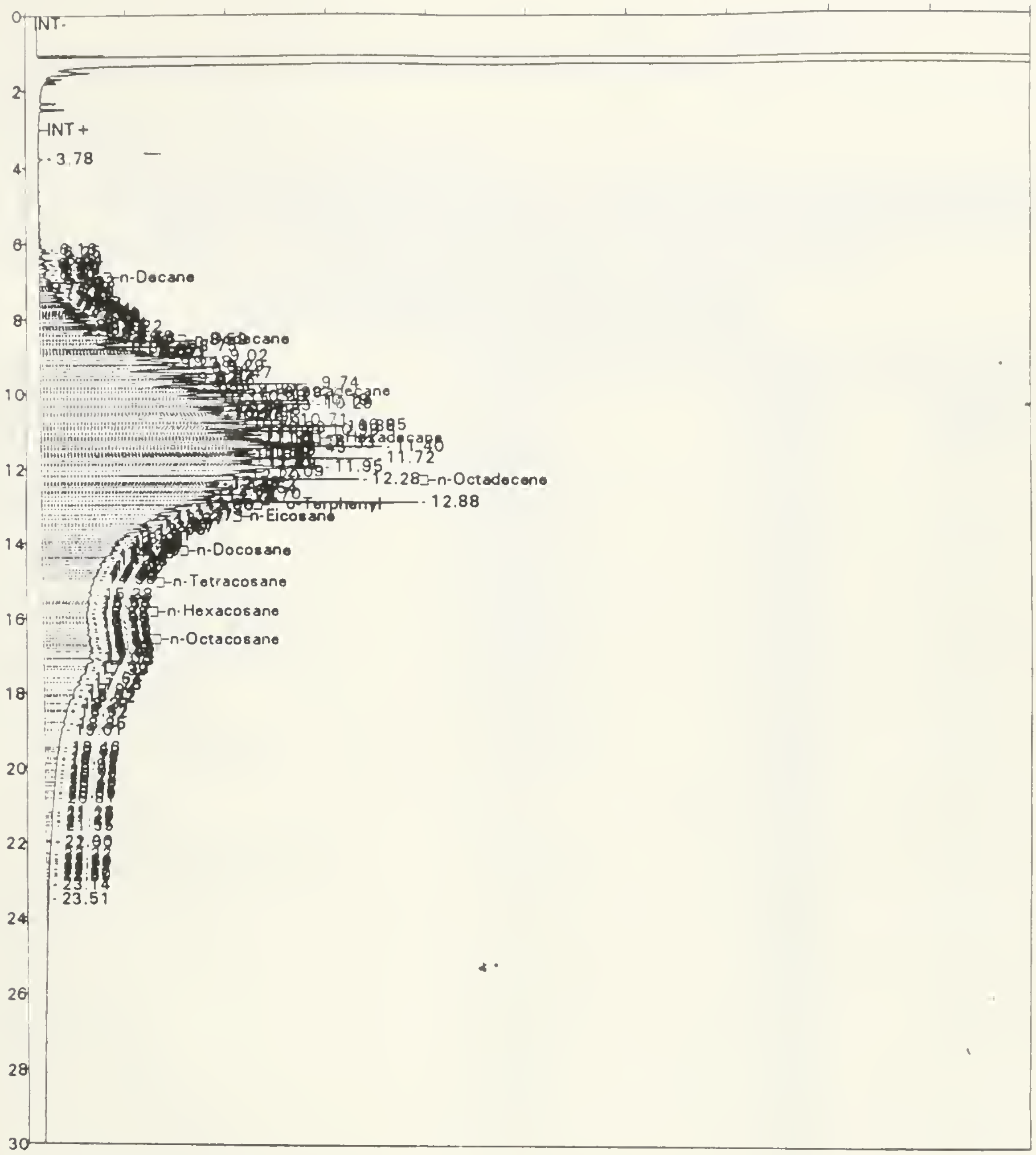
```
ESEL RANGE ORGANICS CHROMATOGRAM
mple Name: lc Blank spk 12May94 1000ml
Area File: C:\CP\DATA1\0518DRO.05A
te & Time Collected: May 18, 1994  20:56:17
thod File: C:\CP\DATA1\DROT.MET
Calibration File: C:\CP\DATA1\DRO0517.CAL
mple Weight: 1                          Dilution: 1
aks subtracted from Total:
mpound Name        RT      Area      Amount    %Recovery
==============    =====  ========  ========  =========
-Terphenyl         12.9   112,976     339        169
) Area         4,822,879      DRO AMOUNT      14,876.54
TEH Area       5,031,143      TEH AMOUNT      15,518.95
```

```
File=C.\CP\DATA1\0518DRO.04R Date printed=05-25-1994 Time= 11.05:02
Sample Name=Meth Blk 12May94 1000ml ;rr658
0.0 to 30.0 min. Low Y=-1.0 High Y=100.0 mv Span=101.0
```



```
DIESEL RANGE ORGANICS CHROMATOGRAM
Sample Name: Meth Blk 12May94 1000ml ;rr658
Area File: C:\CP\DATA1\0518DRO.04A
Date & Time Collected: May 18, 1994  20:17:59
Method File: C:\CP\DATA1\DRO.MET
Calibration File: C:\CP\DATA1\DRO0517.CAL
Sample Weight: 1000                    Dilution: 1
Peaks subtracted from Total:
Compound Name      RT     Area      Amount   %Recovery
==============     =====  ========  ======== =========
* o-Terphenyl      12.9    64,069     192        96
DRO Area            2,919     DRO AMOUNT          0.01
TEH Area           11,668     TEH AMOUNT          0.04
```

```
File=C:\CP\DATA1\0520DRO 10R Date printed=05-25-1994 Time= 11:51:37
Sample Name=94-18576 ,rr658
0.0 to 30.0 min. Low Y=-1.0 High Y=100.0 mv Span=101.0
```



```
DIESEL RANGE ORGANICS CHROMATOGRAM
Sample Name: 94-18576 ;rr658
Area File: C:\CP\DATA1\0520DRO.10A
Date & Time Collected: May 20, 1994  16:11:28
Method File: C:\CP\DATA1\DROT.MET
Calibration File: C:\CP\DATA1\DRO0519.CAL
Sample Weight: 850                          Dilution: 1
Peaks subtracted from Total:
Compound Name       RT     Area      Amount    %Recovery
==============     =====  ======== ======== =========
* o-Terphenyl       13.0    32,736    105        52
DRO Area        6,515,632      DRO AMOUNT           30.49
TEH Area        7,207,615      TEH AMOUNT           33.73
```

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Quality Control Sample: Laboratory Reagent Blank 20-MAY-1994 18:48
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May200101001.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.64	96	80--120
Toluene d8	10.0	9.64	96	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: ____

Quality Control Sample: Laboratory Reagent Blank 21-MAY-1994 01:30
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May201401014.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.77	98	80--120
Toluene d8	10.0	9.71	97	80--120
p-Bromofluorobenzene	10.0	10.5	105	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: uB

Quality Control Sample: Laboratory Reagent Blank 21-MAY-1994 12:57
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052194.b/blk0521a.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.10	91	80--120
Toluene d8	10.0	10.3	103	80--120
p-Bromofluorobenzene	10.0	10.5	105	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

Quality Control Sample: Laboratory Reagent Blank 23-MAY-1994 10:07
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052394.b/23May0301003.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.21	92	80--120
Toluene d8	10.0	9.75	98	80--120
p-Bromofluorobenzene	10.0	9.90	99	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: ________

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Quality Control Sample: Laboratory Reagent Blank 24-MAY-1994 10:21
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052494.b/24May0101001a.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.1	101	80--120
Toluene d8	10.0	9.50	95	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor:

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EPA METHOD 624 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 26-MAY-94 21:57
Lab No.: 94-18551
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052694.b/9418551s.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodolgy.

CONCENTRATION UNITS = ug/L

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Chlorobenzene	5.00	<0.500	5.00	100	60--140
1,2-Dichlorobenzene	5.00	<0.500	4.90	98	60--140
cis-1,2-Dichloroethene	5.00	<0.500	5.00	100	60--140
trans-1,2-Dichloroethene	5.00	<0.500	5.40	108	60--140
1,2-Dichloropropane	5.00	<0.500	4.90	98	60--140
Ethylbenzene	5.00	<0.500	4.70	94	60--140
Styrene	5.00	<0.500	4.90	98	60--140
Tetrachloroethene	5.00	<0.500	5.20	104	60--140
Toluene	5.00	<0.500	5.00	100	60--140
m+p-Xylenes	5.00	<0.500	4.80	96	60--140
o-Xylene	5.00	<0.500	4.80	96	60--140

EPA METHOD 624 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 27-MAY-94 00:46
Lab No.: 94-18561
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052694.b/9418561s.d
Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodolgy.

CONCENTRATION UNITS = ug/L

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Chlorobenzene	5.00	<0.500	4.40	88	60--140
1,2-Dichlorobenzene	5.00	<0.500	4.60	92	60--140
cis-1,2-Dichloroethene	5.00	<0.500	4.60	92	60--140
trans-1,2-Dichloroethene	5.00	<0.500	5.20	104	60--140
1,2-Dichloropropane	5.00	<0.500	4.50	90	60--140
Ethylbenzene	5.00	<0.500	4.90	98	60--140
Styrene	5.00	<0.500	4.80	96	60--140
Tetrachloroethene	5.00	10.4	15.0	92	60--140
Toluene	5.00	<0.500	4.60	92	60--140
m+p-Xylenes	5.00	<0.500	4.70	94	60--140
o-Xylene	5.00	<0.500	4.90	98	60--140

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EPA METHOD 624 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 20-MAY-1994 22:49
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May201001010.d

Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.14	103	60--140
Chlorobenzene	5.00	4.60	92	60--140
1,4-Dichlorobenzene	5.00	4.73	95	60--140
1,2-Dichloroethane	5.00	5.20	104	60--140
1,1-Dichloroethene	5.00	5.47	109	60--140
trans-1,2-Dichloroethene	5.00	4.84	97	60--140
1,2-Dichloropropane	5.00	4.39	88	60--140
Ethyl benzene	5.00	4.88	98	60--140
Tetrachloroethene	5.00	4.64	93	60--140
1,1,2-Trichloroethane	5.00	4.45	89	60--140
1,3-Dichlorobenzene	5.00	4.80	96	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.98	100	80--120
Toluene d8	10.0	9.75	98	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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FAX (406) 252-6069 • 1-800-735-4489

EPA METHOD 624 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 24-MAY-1994 06:27
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052394.b/23May3201032.d

Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.39	108	60--140
Chlorobenzene	5.00	4.69	94	60--140
1,4-Dichlorobenzene	5.00	4.73	95	60--140
1,2-Dichloroethane	5.00	4.79	96	60--140
1,1-Dichloroethene	5.00	5.40	108	60--140
trans-1,2-Dichloroethene	5.00	4.92	98	60--140
1,2-Dichloropropane	5.00	4.38	88	60--140
Ethyl benzene	5.00	4.86	97	60--140
Tetrachloroethene	5.00	4.78	96	60--140
1,1,2-Trichloroethane	5.00	4.64	93	60--140
1,3-Dichlorobenzene	5.00	4.66	93	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.2	102	80--120
Toluene d8	10.0	9.58	96	80--120
p-Bromofluorobenzene	10.0	9.97	100	80--120

REPORT COMMENTS: None

Analyst: CKH Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 10:55
Date Received: 12-MAY-94
Analysis Date: 20-MAY-1994 18:09
File: /chem/5971A.I/052094.b/May200301003.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1307
Well # 1

Lab No.: 94-18551
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**0.68**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.58	96	80--120
Toluene d8	10.0	9.72	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: ____________

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 11:37
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 02:11
File: /chem/5971A.i/052094.b/May201501015.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1308
89-4

Lab No.: 94-18552
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**0.72**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**138**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**1.6**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.67	97	80--120
Toluene d8	10.0	9.68	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 12:10
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 10:14
File: /chem/5971A.I/052094.b/May202701027.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1309

Lab No.: 94-18553
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-10

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**14**	
trans-1,2-Dichloroethene	**156-60-5**	**<0.50**	**0.21J**
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**69**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**5.7**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.0	100	80--120
Toluene d8	10.0	9.50	95	80--120
p-Bromofluorobenzene	10.0	10.6	106	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHP Reviewing Supervisor: MTB

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 13:52
Date Received: 12-MAY-94
Analysis Date: 20-MAY-1994 20:49
File: /chem/5971A.i/052094.b/May200701007.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1310

Lab No.: 94-18570
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

LS-11

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	**108-90-7**	**100**	**1.1**	
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	**106-46-7**	**75**	**0.87**	
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**70**	**18**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**100**	**<0.50**	**0.24J**
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	**5**	**39**	**D**
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	**5**	**7.0**	
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
--------------------OTHER EPA LISTED VOC'S--------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

Lab No.: 94-18570

Sample Info: 140101-1310

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.49	95	80--120
Toluene d8	10.0	9.68	97	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

D= Value derived from a 10-times dilution.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: LWM

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 13:52
Date Received: 12-MAY-94
Analysis Date: 26-MAY-94 13:39
File: /chem/IONTRAP2.i/052694.b/9418570d.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1310

Lab No.: 94-18570 Duplicate
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

LS-11 Lab Dup.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon Tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	**108-90-7**	**100**	**0.73**	
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	**106-46-7**	**75**	**0.80**	
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**70**	**18**	
trans-1,2-Dichloroethene	**156-60-5**	**100**	**<0.50**	**0.29J**
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethylbenzene	100-41-4	700	<0.50	U
Methylene Chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	**5**	**41**	**D**
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	**71-55-6**	**200**	**<0.50**	**0.34J**
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	**5**	**7.0**	
Vinyl Chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	**124-48-1**	**four**	**0.63**	
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

Lab No.: 94-18570 Duplicate
Sample Info: 140101-1310

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.40	84	80--120
Toluene d8	10.0	10.3	103	80--120
p-Bromofluorobenzene	10.0	11.0	110	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
NR= No currently regulated amount.
NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.
D: Value derived from a 10 times dilution.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

ENERGY LABORATORIES

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P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 13:52
Date Received: 12-MAY-94
Analysis Date: 20-MAY-94 22:10
File: /chem/5971A.i/052094.b/May200901009.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1311

LS-11 Duplicate

Lab No.: 94-18571
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	**108-90-7**	**100**	**1.4**	
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	**106-46-7**	**75**	**1.1**	
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**70**	**19**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**100**	**<0.50**	**0.25J**
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	**5**	**41**	**D**
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	**5**	**7.0**	
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.72	97	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.
NR= No currently regulated amount.
NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WB

ENERGY LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 14:26
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 03:30
File: /chem/5971A.i/052094.b/May201701017.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1312

Lab No.: 94-18554
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

90-3

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**5.6**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**33**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**3.0**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.60	96	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WM

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FAX (406) 252-6089 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 15:05
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 07:31
File: /chem/5971A.I/052094.b/May202301023.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1313

Lab No.: 94-18555
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

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EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	0.52	
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.47	95	80--120
Toluene d8	10.0	9.78	98	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTM

ENERGY LABORATORIES

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FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc
Date Sampled: 09 MAY 94 15:30
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 08:52
File: /chem/5971A.i/052094.b/May202501025.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1314

Lab No.: 94-18556
Report Date: 06/01/94
Extraction Method: EPA 5030
Sample Matrix: WATER

90-2B

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**43**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**<0.50**	**0.44J**
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**62**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**9.0**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.93	99	80--120
Toluene d8	10.0	9.62	96	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHH   Reviewing Supervisor:

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.

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Lab No.: 94-18557
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 15:48
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 04:52
File: /chem/5971A.i/052094.b/May201901019.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1315

L-88-13

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**1.6**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**16**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.9**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	**67-66-3**	**<0.50**	**0.17J**
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.59	96	80--120
Toluene d8	10.0	9.72	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 16:16
Date Received: 12-MAY-94
Analysis Date: 21-MAY-94 11:36
File: /chem/5971A.i/052094.b/May202901029.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1316

L-88-10

Lab No.: 94-18572
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	**108-90-7**	**100**	**<0.50**	**0.39J**
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**70**	**44**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**100**	**<0.50**	**0.41J**
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	**5**	**45**	**D**
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	**5**	**11**	
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.4	104	80--120
Toluene d8	10.0	9.14	91	80--120
p-Bromofluorobenzene	10.0	9.49	95	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.
NR= No currently regulated amount.
NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH   Reviewing Supervisor: ____

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Client: Envirocon, Inc.
Date Sampled:
Date Received: 12-MAY-94
Analysis Date: 24-MAY-94 12:01
File: /chem/5971A.i/052494.b/24May0301003.d
Project Info: Livingston Rail Yard
Sample Info: Trip Blank

Lab No.: 94-18573
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
-------------------OTHER EPA LISTED VOC'S-------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

Lab No.: 94-18573
Sample Info: Trip Blank

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	8.61	86	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor:

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-600-735-4489

Quality Control Sample: Laboratory Reagent Blank 20-MAY-1994 18:49
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May200401004.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
----------REGULATED VOC'S: TRIHALOMETHANES----------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
----------OTHER EPA LISTED VOC'S----------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.30	93	80--120
Toluene d8	10.0	9.66	97	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
P O BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 21-MAY-1994 10:54
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May202801028.d

Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
REGULATED VOC'S: TRIHALOMETHANES				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
OTHER EPA LISTED VOC'S				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.1	101	80--120
Toluene d8	10.0	9.71	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

ENERGY LABORATORIES
ENERGY LABORATORIES, INC.
P.O. BOX 30916 • 1107 SOUTH BROADWAY • BILLINGS, MT 59107-0916 • PHONE (406) 252-6325
FAX (406) 252-6069 • 1-800-735-4489

Quality Control Sample: Laboratory Reagent Blank 24-MAY-1994 10:21
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052494.b/24May0101001.d
Remarks: This Laboratory Reagent Blank Quality Control Sample was extracted and analyzed with your set of samples to determine if method analytes or other interferences are present in the laboratory environment, the reagents, or the apparatus.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	108-90-7	100	<0.50	U
1,2-Dichlorobenzene	95-50-1	600	<0.50	U
1,4-Dichlorobenzene	106-46-7	75	<0.50	U
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	156-59-2	70	<0.50	U
trans-1,2-Dichloroethene	156-60-5	100	<0.50	U
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethyl benzene	100-41-4	700	<0.50	U
Methylene chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	127-18-4	5	<0.50	U
Toluene	108-88-3	1000	<0.50	U
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	79-01-6	5	<0.50	U
Vinyl chloride	75-01-4	2	<0.50	U
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	95-47-6		<0.50	U
Total Xylenes		10000	<0.50	U
---------------REGULATED VOC'S: TRIHALOMETHANES---------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
--------------------OTHER EPA LISTED VOC'S--------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	104-51-8	NR	<0.50	U
sec-Butylbenzene	135-98-8	NR	<0.50	U
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	95-49-8	NR	<0.50	U
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	541-73-1	NR	<0.50	U
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	98-82-8	NR	<0.50	U
p-Isopropyltoluene	99-87-6	NR	<0.50	U
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.1	101	80--120
Toluene d8	10.0	9.50	95	80--120
p-Bromofluorobenzene	10.0	10.1	101	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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EPA METHOD 524.2 MATRIX SPIKE REPORT

Quality Control Sample: Matrix Spike Analysis 25-MAY-1994 16:19
Lab No.: 94-18571
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052594.b/9418571s.d

Remarks: These compounds were spiked into the sample matrix to determine if the sample matrix contributes bias to the analytical results and to monitor the accuracy of the methodolgy.

CONCENTRATION UNITS = ug/L

Spike Compound	Spike Added	Sample Concentration	Matrix Spike Concentration	MS %Rec	QC Limits
Chlorobenzene	50.0	<5.00	48.3	97	60--140
1,2-Dichlorobenzene	50.0	<5.00	46.7	93	60--140
cis-1,2-Dichloroethene	50.0	19.1	67.0	96	60--140
trans-1,2-Dichloroethene	50.0	<5.00	53.3	107	60--140
1,2-Dichloropropane	50.0	<5.00	49.2	98	60--140
Ethylbenzene	50.0	<5.00	46.5	93	60--140
Styrene	50.0	<5.00	48.5	97	60--140
Tetrachloroethene	50.0	40.6	88.3	95	60--140
Toluene	50.0	<5.00	48.4	97	60--140
m+p-Xylenes	50.0	<5.00	45.9	92	60--140
o-Xylene	50.0	<5.00	46.0	92	60--140

REPORT COMMENTS: The sample was diluted 10 X before spiking.

Analyst: SJC Reviewing Supervisor: WJB

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EPA METHOD 524.2 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 25-MAY-1994 10:24
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/IONTRAP2.i/052594.b/qcs0525a.d

Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon Tetrachloride	5.00	5.20	104	60--140
Chlorobenzene	5.00	4.80	96	60--140
1,4-Dichlorobenzene	5.00	5.10	102	60--140
1,2-Dichloroethane	5.00	5.10	102	60--140
1,1-Dichloroethene	5.00	6.40	128	60--140
trans-1,2-Dichloroethene	5.00	5.40	108	60--140
1,2-Dichloropropane	5.00	4.70	94	60--140
Ethylbenzene	5.00	5.00	100	60--140
Tetrachloroethene	5.00	4.60	92	60--140
1,1,2-Trichloroethane	5.00	5.20	104	60--140
1,3-Dichlorobenzene	5.00	5.20	104	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.5	105	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: ________

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Client: Envirocon, Inc.
Date Sampled: 09-MAY-94 16:56
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 06:12
File: /chem/5971A.i/052094.b/May202101021.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1317

Lab No.: 94-18558
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

L-87-3

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**24**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**<0.50**	**0.35J**
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**96**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**8.7**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.88	99	80--120
Toluene d8	10.0	9.74	97	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CNH Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 09:53
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 13:40
File: /chem/IONTRAP2.i/052194.b/9418559a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1318

Lab No.: 94-18559
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

#7

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**0.53**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**13**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**0.50**	
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.40	94	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: ________

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 11:16
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 15:05
File: /chem/IONTRAP2.i/052194.b/9418560a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1319

Lab No.: 94-18560
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

L-87-5

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**0.78**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**58**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.5**	
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.20	92	80--120
Toluene d8	10.0	10.1	101	80--120
p-Bromofluorobenzene	10.0	11.2	112	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
D= Value derived from a 10 times dilution.

REPORT COMMENTS: None

Analyst: ________ Reviewing Supervisor: ________

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 11:47
Date Received: 12-MAY-94
Analysis Date: 23-MAY-1994 17:28
File: /chem/5971A.i/052394.b/23May1301013.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1320

Lab No.: 94-18561
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-7

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**10**	
1,1,1-Trichloroethane	**71-55-6**	<0.50	**0.43J**
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**1.4**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.87	99	80--120
Toluene d8	10.0	9.28	93	80--120
p-Bromofluorobenzene	10.0	9.79	98	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.

REPORT COMMENTS: None

Analyst: Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 12:14
Date Received: 12-MAY-94
Analysis Date: 23-MAY-1994 16:06
File: /chem/5971A.i/052394.b/23May1101011.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1321

Lab No.: 94-18562
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

92-1

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**<0.50**	0.30J
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**87**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.82	98	80--120
Toluene d8	10.0	9.63	96	80--120
p-Bromofluorobenzene	10.0	9.70	97	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
J= Estimated value. Present, but less than the limit of quantitation.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CNH Reviewing Supervisor: WAB

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 13:54
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 15:48
File: /chem/IONTRAP2.i/052194.b/9418563a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1322
B-Street

Lab No.: 94-18563
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.10	91	80--120
Toluene d8	10.0	9.80	98	80--120
p-Bromofluorobenzene	10.0	11.1	111	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 13:54
Date Received: 12-MAY-94
Analysis Date: 31-MAY-1994 14:26
File: /chem/IONTRAP2.i/053194.b/9418563b.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1322

Lab No.: 94-18563 Duplicate
Report Date: 06/01/94
Extraction Method: EPA 5030
Sample Matrix: WATER

B-Street
Lab Dup.

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.40	94	80--120
Toluene d8	10.0	10.2	102	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 14:09
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 17:14
File: /chem/IONTRAP2.i/052194.b/9418564a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1323

Lab No.: 94-18564
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

Rainbow

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**2.2**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**10**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**1.8**	
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.40	94	80--120
Toluene d8	10.0	10.0	100	80--120
p-Bromofluorobenzene	10.0	10.4	104	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: Reviewing Supervisor:

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 14:38
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 18:40
File: /chem/IONTRAPZ.i/052194.b/9418565a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1324

Lab No.: 94-18565
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER

94-1

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**2.4**	
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.30	93	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	10.2	102	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 15:51
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 20:07
File: /chem/IONTRAP2.i/052194.b/9418566a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1325

Lab No.: 94-18566
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

87-3

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**119**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**0.91**	
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.20	92	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	10.6	106	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
D= Value derived from a 20 times dilution.

REPORT COMMENTS: None

Analyst: ______ Reviewing Supervisor: ______

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 15:51
Date Received: 12-MAY-94
Analysis Date: 21-MAY-1994 21:32
File: /chem/IONTRAP2.i/052194.b/9418567a.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1326

Lab No.: 94-18567
Report Date: 06/03/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-3
Duplicate

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**113**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**0.71**	
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.10	91	80--120
Toluene d8	10.0	9.80	98	80--120
p-Bromofluorobenzene	10.0	10.0	100	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.
D= Value derived from a 20 times dilution.

REPORT COMMENTS: None

Analyst: ____ Reviewing Supervisor: ____

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Client: Envirocon, Inc.
Date Sampled: 10-MAY-94 16:42
Date Received: 12-MAY-94
Analysis Date: 23-MAY-1994 14:38
File: /chem/5971A.i/052394.b/23May0901009.d
Project Info: Livingston Rail Yard
Sample Info: 140101-1327

Lab No.: 94-18568
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

89-9

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**0.82**	
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	**127-18-4**	**80**	**D**
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	**79-01-6**	**2.5**	
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.16	92	80--120
Toluene d8	10.0	9.70	97	80--120
p-Bromofluorobenzene	10.0	9.64	96	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.
D= Value derived from a 10-times dilution.

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

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Client: Envirocon, Inc.
Date Sampled:
Date Received: 12-MAY-94
Analysis Date: 24-MAY-1994 11:18
File: /chem/5971A.i/052494.b/24May0201002.d
Project Info: Livingston Rail Yard
Sample Info: Trip Blank

Lab No.: 94-18569
Report Date: 05/31/94
Extraction Method: EPA 5030
Sample Matrix: WATER

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L (ppb)

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.10	91	80--120
Toluene d8	10.0	9.97	100	80--120
p-Bromofluorobenzene	10.0	9.93	99	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: CHA Reviewing Supervisor: WAB

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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FAX (406) 252-6069 • 1-800-735-4489

EPA METHOD 524.2 BLANK SPIKE REPORT

Quality Control Sample: Certified Reference Sample Analysis 20-MAY-1994 22:49
Report Date: 05/27/94
Extraction Method: EPA 5030
Sample Matrix: WATER
File: /chem/5971A.i/052094.b/May201001010.d
Remarks: This certified reference sample was spiked into a blank sample matrix then extracted and analyzed with your set of samples to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate results.

CONCENTRATION UNITS = ug/L (ppb)

Spike Compound	Added	Measured	%Rec	QC Limits
Carbon tetrachloride	5.00	5.14	103	60--140
Chlorobenzene	5.00	4.60	92	60--140
1,4-Dichlorobenzene	5.00	4.73	95	60--140
1,2-Dichloroethane	5.00	5.20	104	60--140
1,1-Dichloroethene	5.00	5.47	109	60--140
trans-1,2-Dichloroethene	5.00	4.84	97	60--140
1,2-Dichloropropane	5.00	4.39	88	60--140
Ethyl benzene	5.00	4.88	98	60--140
Tetrachloroethene	5.00	4.64	93	60--140
1,1,2-Trichloroethane	5.00	4.45	89	60--140
1,3-Dichlorobenzene	5.00	4.80	96	60--140

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	9.98	100	80--120
Toluene d8	10.0	9.75	98	80--120
p-Bromofluorobenzene	10.0	10.3	103	80--120

REPORT COMMENTS: None

Analyst: CHH Reviewing Supervisor: WTB

ENERGY LABORATORIES

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Client: Envirocon, Inc.
Date Sampled: 10-JUN-94 13:15
Date Received: 13-JUN-94
Analysis Date: 16-JUN-1994 16:07
File: /chem/IONTRAP2.i/vc61694.b/9424645e.d
Project Info: BN-Livingston
Sample Info: 140101-1328

L-87-2

Lab No.: 94-24645
Report Date: 06/20/94
Extraction Method: EPA 5030
Sample Matrix: WATER

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ENVIROCON, Inc.
Livingston, Mt.

EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
----------REGULATED VOLATILE ORGANIC CHEMICALS (VOC'S)----------				
Benzene	71-43-2	5	<0.50	U
Carbon Tetrachloride	56-23-5	5	<0.50	U
Chlorobenzene	**108-90-7**	**100**	**32**	**D**
1,2-Dichlorobenzene	**95-50-1**	**600**	**2.7**	
1,4-Dichlorobenzene	**106-46-7**	**75**	**2.6**	
1,2-Dichloroethane	107-06-2	5	<0.50	U
1,1-Dichloroethene	75-35-4	7	<0.50	U
cis-1,2-Dichloroethene	**156-59-2**	**70**	**46**	**D**
trans-1,2-Dichloroethene	**156-60-5**	**100**	**1.6**	
1,2-Dichloropropane	78-87-5	5	<0.50	U
Ethylbenzene	**100-41-4**	**700**	**0.54**	
Methylene Chloride	75-09-2	5	<0.50	U
Styrene	100-42-5	100	<0.50	U
Tetrachloroethene	**127-18-4**	**5**	**<0.50**	**0.42J**
Toluene	**108-88-3**	**1000**	**<0.50**	**0.40J**
1,2,4-Trichlorobenzene	120-82-1	70	<0.50	U
1,1,1-Trichloroethane	71-55-6	200	<0.50	U
1,1,2-Trichloroethane	79-00-5	5	<0.50	U
Trichloroethene	**79-01-6**	**5**	**16**	
Vinyl Chloride	**75-01-4**	**2**	**7.0**	
m+p-Xylenes	108383/106423		<0.50	U
o-Xylene	**95-47-6**		**2.2**	
Total Xylenes		10000	**2.2**	
----------------REGULATED VOC'S: TRIHALOMETHANES----------------				
Bromodichloromethane	75-27-4	Total	<0.50	U
Bromoform	75-25-2	of all	<0.50	U
Chlorodibromomethane	124-48-1	four	<0.50	U
Chloroform	67-66-3	100	<0.50	U
---------------------OTHER EPA LISTED VOC'S---------------------				
Bromobenzene	108-86-1	NR	<0.50	U
Bromochloromethane	74-97-5	NR	<0.50	U
Bromomethane	74-83-9	NR	<0.50	U
n-Butylbenzene	**104-51-8**	**NR**	**0.58**	
sec-Butylbenzene	**135-98-8**	**NR**	**1.0**	
tert-Butylbenzene	98-06-6	NR	<0.50	U
Chloroethane	75-00-3	NR	<0.50	U
Chloromethane	74-87-3	NR	<0.50	U
2-Chlorotoluene	**95-49-8**	**NR**	**54**	**D**
4-Chlorotoluene	106-43-4	NR	<0.50	U
1,2-Dibromo-3-chloropropane	96-12-8	NA	<0.50	U

(report continued on page 2)

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EPA METHOD 524.2
VOLATILE ORGANICS ANALYSIS REPORT (continued)

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	EPA MCL	RESULT	QUALIFIER
1,2-Dibromoethane	106-93-4	NA	<0.50	U
Dibromomethane	74-95-3	NR	<0.50	U
1,3-Dichlorobenzene	**541-73-1**	**NR**	**<0.50**	0.43J
Dichlorodifluoromethane	75-71-8	NR	<0.50	U
1,1-Dichloroethane	75-34-3	NR	<0.50	U
1,1-Dichloropropene	563-58-6	NR	<0.50	U
1,3-Dichloropropane	142-28-9	NR	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	NR	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	NR	<0.50	U
2,2-Dichloropropane	594-20-7	NR	<0.50	U
Fluorotrichloromethane	75-69-4	NR	<0.50	U
Hexachlorobutadiene	87-68-3	NR	<0.50	U
Isopropylbenzene	**98-82-8**	**NR**	0.57	
p-Isopropyltoluene	**99-87-6**	**NR**	**<0.50**	0.36J
Naphthalene	91-20-3	NR	<0.50	U
n-Propylbenzene	103-65-1	NR	<0.50	U
1,1,1,2-Tetrachloroethane	630-20-6	NR	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	NR	<0.50	U
1,2,3-Trichlorobenzene	87-61-6	NR	<0.50	U
1,2,3-Trichloropropane	96-18-4	NR	<0.50	U
1,2,4-Trimethylbenzene	95-63-6	NR	<0.50	U
1,3,5-Trimethylbenzene	108-67-8	NR	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	11.0	110	80--120
Toluene d8	10.0	10.5	105	80--120
p-Bromofluorobenzene	10.0	8.50	85	80--120

QUALIFIER CODES EXPLANATION:

U= Indicates compound was analyzed for but not detected.

J= Estimated value. Present, but less than the limit of quantitation.

D= Value derived from a 10 times dilution.

NR= No currently regulated amount.

NA= Not applicable to this method. Concentrations are presented for screening purposes. For regulatory compliance, analyze using EPA method 504 which has lower detection limits.

REPORT COMMENTS: None

Analyst: FAC Reviewing Supervisor:

ENERGY LABORATORIES

ENERGY LABORATORIES, INC.
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Client: Envirocon, Inc.
Date Sampled: 10-JUN-94 13:45
Date Received: 13-JUN-94
Analysis Date: 16-JUN-1994 16:51
File: /chem/IONTRAP2.i/vc61694.b/9424646a.d
Project Info: BN-Livingston
Sample Info: 140101-1329

Lab No.: 94-24646
Report Date: 06/20/94
Extraction Method: EPA 5030
Sample Matrix: WATER

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Livingston, Mt.

92-3

EPA METHOD 624
VOLATILE ORGANICS ANALYSIS REPORT

CONCENTRATION UNITS = ug/L

COMPOUNDS	CAS NO.	RESULT	QUALIFIER
Carbon Tetrachloride	56-23-5	<0.50	U
Chlorobenzene	108-90-7	<0.50	U
1,2-Dichlorobenzene	95-50-1	<0.50	U
1,4-Dichlorobenzene	106-46-7	<0.50	U
1,2-Dichloroethane	107-06-2	<0.50	U
1,1-Dichloroethene	75-35-4	<0.50	U
cis-1,2-Dichloroethene	156-59-2	<0.50	U
trans-1,2-Dichloroethene	156-60-5	<0.50	U
1,2-Dichloropropane	78-87-5	<0.50	U
Methylene Chloride	75-09-2	<0.50	U
Tetrachloroethene	127-18-4	<0.50	U
1,1,1-Trichloroethane	71-55-6	<0.50	U
1,1,2-Trichloroethane	79-00-5	<0.50	U
Trichloroethene	79-01-6	<0.50	U
Vinyl Chloride	75-01-4	<0.50	U
2-Chloroethylvinyl ether	110-75-8	<0.50	U
Bromodichloromethane	75-27-4	<0.50	U
Bromoform	75-25-2	<0.50	U
Chlorodibromomethane	124-48-1	<0.50	U
Chloroform	67-66-3	<0.50	U
Bromomethane	74-83-9	<0.50	U
Chloroethane	75-00-3	<0.50	U
Chloromethane	74-87-3	<0.50	U
2-Chlorotoluene	95-49-8	<0.50	U
1,3-Dichlorobenzene	541-73-1	<0.50	U
Dichlorodifluoromethane	75-71-8	<0.50	U
1,1-Dichloroethane	75-34-3	<0.50	U
cis-1,3-Dichloropropene	10061-01-5	<0.50	U
trans-1,3-Dichloropropene	10061-02-6	<0.50	U
Fluorotrichloromethane	75-69-4	<0.50	U
1,1,2,2-Tetrachloroethane	79-34-5	<0.50	U

SURROGATE RECOVERY REPORT

Surrogate Compound	Added ug/L	Measured ug/L	%Rec	QC Limits
1,2-Dichloroethane d4	10.0	10.2	102	80--120
Toluene d8	10.0	10.5	105	80--120
p-Bromofluorobenzene	10.0	9.30	93	80--120

QUALIFIER CODES EXPLANATION:
U= Indicates compound was analyzed for but not detected.

REPORT COMMENTS: None

Analyst: Reviewing Supervisor: WKB